This Base Manual covers International Commercial Microwave Ovens with 50 Hz. Refer to individual Technical Sheet for information on specific models.

RC519M	P1199603M
RC519M	P1199604M

Service

International Commercial Microwave Ovens

Service Manual for
Amana®

This manual is to be used by qualified appliance technicians only. Amana does not assume any responsibility for property damage or personal injury for improper service procedures done by an unqualified person.

Amana

RS5320014
Revision 0
July 2000

Important Information

Pride and workmanship go into every product we produce to provide our customers with quality products. It is possible, however, that during its lifetime a product may require service. Products should be serviced only by a qualified service technician who is familiar with the safety procedures required in the repair and who is equipped with the proper tools, parts, testing instruments and the appropriate service manual. **REVIEW ALL SERVICE INFORMATION IN THE APPROPRIATE SERVICE MANUAL BEFORE BEGINNING REPAIRS.**

Important Notices for Consumers and Servicers

⚠ WARNING

To avoid risk of serious injury or death, repairs should not be attempted by an unauthorized personnel, dangerous conditions (such as exposure to electrical shock) may result.

⚠ CAUTION

Amana will not be responsible for any injury or property damage from improper service procedures. If performing service on your own product, assume responsibility for any personal injury or property damage which may result.

To locate an authorized servicer, please consult your telephone book or the dealer from whom you purchased this product. For further assistance, please contact:

CONSUMER AFFAIRS DEPT. AMANA APPLIANCES, INC. AMANA, IOWA 52204	**OR** **CALL**	1-319-622-5511 or (1-800-843-0304) and ask for Consumer Affairs

If outside the United States contact:

AMANA
ATTN: CONSUMER AFFAIRS DEPT
AMANA, IOWA 52204, USA
Telephone: (319) 622-5511
Facsimile: (319) 622-2180
TELEX: 4330076 AMANA
CABLE: "AMANA", AMANA, IOWA, USA

Recognize Safety Symbols, Words, and Labels

⚠ DANGER

DANGER - Immediate hazards which **WILL** result in severe personal injury or death.

⚠ WARNING

WARNING - Hazards or unsafe practices which **COULD** result in severe personal injury or death.

⚠ CAUTION

CAUTION - Hazards or unsafe practices which **COULD** result in minor personal injury or product or property damage.

Important Product Information

⚠ WARNING

Precautions to be observed before and during servicing to avoid possible exposure to excessive microwave energy, or electrical shock disconnect power to oven.

(A) Do not operate or allow oven to be operated with door open.

(B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:

- Interlock operation
- Proper door closing
- Seal and sealing surfaces (arcing, wear, and other damage)
- Damage to or loosening of hinges and latches
- Evidence of dropping or abuse

(C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity, and connections.

(D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced or adjusted by procedures described in this manual before oven is released to the consumer.

(E) Check microwave leakage to verify compliance with the federal performance standard should be performed on each oven prior to release to the consumer.

Wiring

Good service practice is to never route wiring over terminals and/or sharp edges. This applies to any wiring without regard to the circuit voltage. Wire insulation material and thickness is designed and regulated for electrical spacing purpose only, but cannot always be relied upon because of possible cuts and/or abrasions, which can occur during servicing.

⚠ WARNING

To avoid risk of electrical shock, injury, or death, make sure these earthing instructions are followed.

Earthing Instructions

⚠ WARNING

Do not remove earthing prong when installing earthed appliance in a home or business that does not have three wire earthing receptacle, under no condition is earthing prong to be cut off or removed. It is the personal responsibility of the consumer to contact a qualified electrician and have properly earthed three prong wall receptacle installed in accordance with appropriate electrical codes

Should a two prong adapter plug be required temporarily, it is the personal responsibility of the consumer to have it replaced with properly earthed three prong receptacle or the two prong adapter properly earthed by a qualified electrician in accordance with appropriate electrical codes.

Servicing of Earthed Products

The standard accepted color coding for earthing wires is GREEN or GREEN WITH YELLOW STRIPE. These earth leads are NOT to be used as current carrying conductors. It is extremely important that the technician replace any and all earths prior to completion of the service call. Under no condition should earth wire be left off causing a potential hazard to technicians and consumer.

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PRECAUTIONS TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(a) **DO NOT** attempt to operate this oven with the door open since open-door operation can result in harmful exposure to microwave energy. It is important not to defeat or tamper with the safety interlocks.

(b) **DO NOT** place any object between the oven front face and the door or allow soil or cleaner residue to accumulate on sealing surfaces.

(c) **DO NOT** operate the oven if it is damaged. It is particularly important that the oven door close properly and that there is no damage to the: (a) Door (bent), (b) hinges and latches (broken or loosened), (c) door seals and sealing surfaces.

(d) The oven should **NOT** be adjusted or repaired by anyone except properly qualified service personnel.

PRECAUTIONS A PRENDRE POUR EVITER LES RISQUES D'EXPOSITION A DES QUANTITES EXCESSIVES D'ENERGIE MICRO-ONDE

(a) **NE PAS** essayer de faire marcher le four avec la porte ouverte car cela risque d'exposer l'utilisateur à une quantité nocive d'énergie micro-onde. Ne jamais supprimer ou altérer les verrouillages de sécurité.

(b) **NE RIEN METTRE** entre la face avant du four et la porte et ne pas laisser de saletés ou de produits de nettoyage s'accumuler sur les surfaces d'étanchéité.

(c) **NE JAMAIS** faire fonctionner le four s'il est endommagé. Il est tout particulièrement important que la porte du four se ferme correctement et que les éléments suivants fonctionnent sans problème : a) la porte (tassée), b) les charnières et les verrouillages (cassés ou desserrés), c) les joints et les surfaces d'étanchéité de la porte

(d) Le four **NE DOIT ETRE** réparé que par des réparateurs qualifiés.

PRECAUCIONES PARA EVITAR LA POSIBLE EXPOSICION EXCESIVA A LA ENERGIA DE MICROONDAS

(a) **NO** intente hacer funcionar este horno con la puerta abierta ya que podría resultar en una exposición dañina a la energía de microondas. Es muy importante no pasar por alto o aventar los interruptores de seguridad.

(b) **NO** coloque ningún objeto entre el frente del horno y la puerta. Tampoco permita que suciedad o residuos de limpiador se acumulen en las superficies de sellado del aparato.

(c) **NO** haga funcionar el horno si éste estuviera averiado. Es de particular importancia que la puerta del horno se cierre correctamente y que no existan daños en: (a) la puerta (dobladuras), (b) las bisagras y el pestillo (rotos o flojos), (c) los sellos de las puertas y otras superficies de sellado.

(d) El horno **NO** deberá ser ajustado o reparado por ninguna persona excepto personal de servicio propiamente calificado.

VORSICHTSMASSNAHMEN ZUM SCHUTZ GEGEN MIKROWELLENSTRAHLUNG

(a) **NICHT** versuchen, den Herd mit offener Tür zu betreiben, da Sie dadurch schädlicher Mikrowellenstrahlung ausgesetzt werden können. Auf keinen Fall die Sicherheitsverriegelung unwirksam machen oder ändern.

(b) **KEINE** Gegenstände zwischen Herd und Tür einklemmen oder Schmutz und Rückstände von Reinigungsmitteln auf den Dichtflächen sich ansammeln lassen.

(c) **KEINEN** beschädigten Herd benutzen. Es ist besonders wichtig, daß die Herdtür richtig schließt und die folgenden Teile nicht beschädigt sind: (a) Tür (z.B. verbogen), (b) Scharniere und Klinken (z.B. gebrochen oder lose), (c) Türdichtungen und Dichtflächen.

(d) Das Gerät **NUR** von qualifiziertem Kundendienstpersonal reparieren lassen.

Important Safety Information

VAROITUS
MIKROAALTOSÄTEILYÄ

Käyttäjä ei saa joutua alttiiksi mikroaaltoenergialle, jota voi säteilä magnetronista tai muusta mikroaaltoja kehittävästä laitteesta, jos sitä käytetään väärin tai jos se ei kytketään väärin. Kaikkien mikroaaltoliitäntöjen sekä syöttöettä ulostuloputkella, aaltoputkien laippojen ja tiivisteiden tulee olla varmistettuja. Mikroaaltouunia ei saa koskaan käyttää ilman kuormaa, jossa mikroaaltoenergiaa kuluu. Avoimeen aaltoputkeen tai anteniin ei saa koskaan katsoa virran ollessa kytkettynä.

VARNING FÖR
MIKROVÅGSSTRÅLNING

Mikrovågsenergi kan stråla från magnetronen eller från annan mikrovågsgenererande anordning om den används eller ansluts felaktigt. Alla anslutningar för mikrovåg, såsom flänsar och tätningar måste vara betryggande ur säkerhetssynpunkt. Starta aldrig anordningen utan mikrovågsabsorberande belastning. Mikrovågsstrålning från en öppen vågledare eller antenn har sådan strålningstäthet att uppenbar skaderisk föreligger.

ADVARSEL FOR
MIKROBØLGESTRALING

Mikrobølgeenergi kan stråle fra magnetronen eller annen mikrobølgeproduserende anordning ved feilkopling eller feil bruk. Alle mikrobølgeinntak og -uttaksforbindelser, flenser og pakninger, må være sikkerhetsmessig betryggende utført. Anordningen må aldri startes uten mikrobølgeabsorberende belastning. Se aldri inn mot en åpen bølgeleder eller antenne mens apparatet er i drift.

FORSIGTIG
MIKROBØLGESTRÅLING

Undgå at blive udsat for stråling fra mikrobølgegeneratoren eller andre dele som fører mikrobølgeenergi.

PRECAUZIONI PER EVITARE L'EVENTUALE ECCESSIVA ESPOSIZIONE ALLE MICROONDE

(a) **NON** cercare di far funzionare questo forno con lo sportello aperto: ciò può causare l'esposizione nociva alle microonde. È importante non danneggiare o manomettere i dispositivi di sicurezza.
(b) **NON** porre alcun oggetto fra il lato anteriore del forno e lo sportello o permettere il depositarsi di sporcizia o residui sulle superfici di tenuta.
(c) **NON** usare un forno danneggiato. È molto importante che lo sportello del forno si chiuda bene e che non vi siano danni a: (a) sportello (piegato); (b) cardini e dispositivi di chiusura (rotti o allentati); (c) guarnizioni dello sportello e delle superfici di tenuta.
(d) Il forno va regolato o riparato **ESCLUSIVAMENTE** da personale d'assistenza debitamente qualificato.

VOORZORGSMAATREGELEN TER VOORKOMING VAN MOGELIJKE BLOOTSTELLING AAN OVERMATIGE MICROGOLFENERGIE

(a) Probeer **NIET** om deze magnetron met de deur open te gebruiken, daar gebruik met open deur schadelijke blootstelling aan microgolfenergie ten gevolge kan hebben. Het is belangrijk dat u de veiligheidssluitingen nooit onklaar maakt of ermee knoeit.
(b) **Plaats GEEN** voorwerpen tussen de voorkant van de oven en de deur. Zorg dat geen vuil of schoonmaakmiddel op de sluitvlakken achterblijft.
(c) Gebruik de magnetron **NIET** indien hij beschadigd is. Het is vooral belangrijk dat de deur goed sluit en dat er geen beschadigingen zijn aan: (a) de deur (verbogen), (b) de scharnieren en sloten (gebroken of los), (c) de deurdichtingen en sluitvlakken.
(d) De magnetron mag **UITSLUITEND** door daartoe bevoegd servicepersoneel bijgesteld en gerepareerd worden.

Important Safety Information

⚠ CAUTION

Read the following information to avoid possible exposure to microwave radiation:

The basic design of the Amana or Menumaster microwave ovens make it an inherently safe device to both user and servicer. However, there are some precautions which should be followed when servicing the microwave oven to maintain this safety. These are as follows:

1. Always operate the unit from an adequately earthed outlet. Do not operate on a two-wire extension cord.
2. Before servicing the unit (if unit is operable), perform the microwave leakage test.
3. The oven should never be operated if the door does not fit properly against the seal, the hinges or hinge bearings are damaged or broken; the choke is damaged, (pieces missing, etc.); or any other visible damage can be noted. Check the choke area to ensure that this area is clean and free of all foreign matter.
4. If the oven operates with the door open and produces microwave energy, take the following steps.
   A. Tell the user not to operate the oven.
   B. Contact Amana Appliances immediately.
5. Always have the oven disconnected when the outer case is removed except when making the "live" tests called for in this Service Manual. Do not reach into the equipment area while the unit is energized. Make all connections for the test and check them for tightness before plugging the cord into the outlet.
6. Always earth the capacitors on the magnetron filter box and H. V. Capacitor with an insulated-handle screwdriver before working in the high voltage area of the equipment compartment. Some types of failures will leave a charge in these capacitors and the discharge could cause a reflex action which could make you injure yourself.
7. In the area of the transformer, capacitor, diode, and magnetron there is HIGH VOLTAGE. When the unit is operating, keep this area clean and free of anything which could possibly cause an arc or earthing, etc.
8. Do not for any reason defeat the interlock switches. There is no valid reason for this action at any time; nor will it be condoned by Amana.
9. IMPORTANT: Before returning a microwave to a customer, check for proper switch interlock action. The primary and secondary switches MUST open when the door is actuated. The monitor switch MUST close at a $^1/_4$" when the door is opened.
10. Before returning a microwave to a customer, verify the door spacing is reasonably uniform along the top, bottom, and sides, and that it measures $^1/_8$" or less.
11. The Amana microwave oven should never be operated with:
    - Any components removed and/or bypassed.
    - Any of the safety interlocks found to be defective.
    - Any of the seal surfaces defective, missing, or damaged.
12. To ensure that the unit does not emit excessive microwave leakage and to meet the Department of Health Human Service guidelines, check the oven for microwave leakage using Narda Model 8110B, or Holaday HI1501, HI1510, HI1710 leakage monitor as outlined in the instructions. The maximum leakage level allowed is 4mW/cm^2.
13. If servicer encounters an emission reading over 4 mw/cm^2 the servicer is to cease repair and contact the Amana Service Department immediately for further direction. Amana Appliances will contact the proper Government Agency upon verification of the test results.

Specifications

Features	RC519MP
Air Filter	Removable, located front grille at bottom of unit.
Timing	Programmable touch control with digital display - electronic.
Number of Magnetrons	3
End of Cycle Indication	Visual display and electronic tone.
Frequency	2450 MHz
Cooking Power	
IEC 705 Test Method	1900 Watts Nominal
Traditional Test Method	1600 Watts Nominal
Power Requirements	
Phase	50 Hz Single Phase
Input Power	2900 Watts
Electrical Ratings	230 Vac
Oven Interior Dimensions	
Height	8 3/4 inches / 22.2 cm
Width	13 3/16 inches / 33.5 cm
Depth - (with door closed)	14 7/8 inches / 37.7 cm
Volume	1 cu. ft. / 28 liters
Exterior Dimensions	
Height - Overall	18 inches / 45.8 cm
Width	19 1/4 inches / 48.9 cm
Depth - (overall)	25 3/8 inches / 64.5 cm
Shipping Weight	119 lbs. / 54.0 kg
Uncrated	94 lbs. / 42.63 kg

General Information

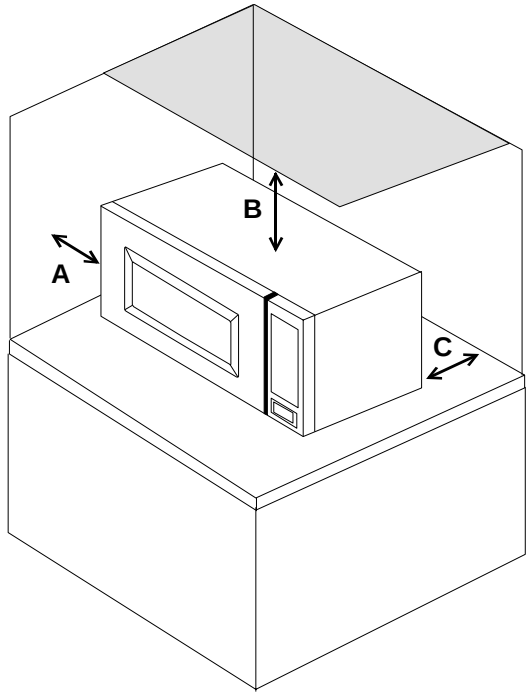
Placement of the Oven

Do not install microwave next to or above source of heat, such as a deep fat fryer. This could cause the microwave to operate improperly and could shorten the life of electrical components.

Install microwave on a level countertop surface.

Do not block or obstruct oven filter. Allow access for cleaning.

All air vents must be kept clear during cooking. If air vents are covered during operation the oven may overheat. In this case, a sensitive thermal safety device automatically turns the oven off. The oven will be inoperable until the oven has cooled sufficiently.



A–Allow at least 3.81 cm (1-1/2") of clearance around sides of unit.
B–Allow at least 3.81 cm (1-1/2") of clearance on top unit.
C–Allow at least 6.5 cm (2-1/2") of clearance between air discharge on back of unit and back wall.

Radio Interference

Microwave oven operation may cause interference to radio, television, or similar equipment. Reduce or eliminate interference by doing the following:

- Clean the door and sealing surfaces of microwave oven according to instructions in “Care and Cleaning” section.
- Place radio, television, etc. as far as possible from the microwave oven.
- Use a properly installed antenna on radio, television, etc. to obtain stronger signal reception.

Earthing Instructions

This appliance **MUST** be earthed. If an electrical short circuit occurs, earthing reduces risk of electric shock by providing an escape wire for the electric current. The cord for this appliance has an earthing wire with an earthing plug. Place the plug into an outlet that is properly installed and earthed. Do not use a two–prong adapter.

⚠ WARNING

To avoid risk of electric shock, personal injury or death, do not alter the plug and use earthing plug properly.

Consult a qualified electrician if you do not understand the earthing instructions or if you wonder whether the appliance is properly earthed.

Keep the electrical power cord dry and do not pinch or crush it in any way.

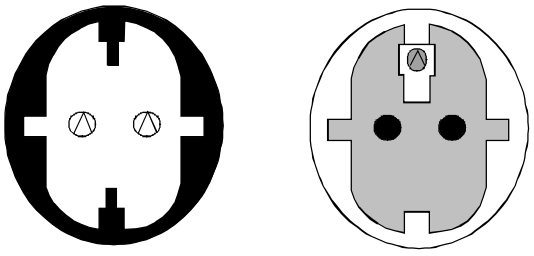
The wires in the power cord are colored in accordance with the following code:

- **Green/Yellow: Earth**
- **Blue: Neutral**
- **Brown: Live**

If oven main lead wire colors do not correspond with terminal plug markings or colors, match plug terminals according to following markings:

- **E—Earth**
- **N—Neutral**
- **L—Live**

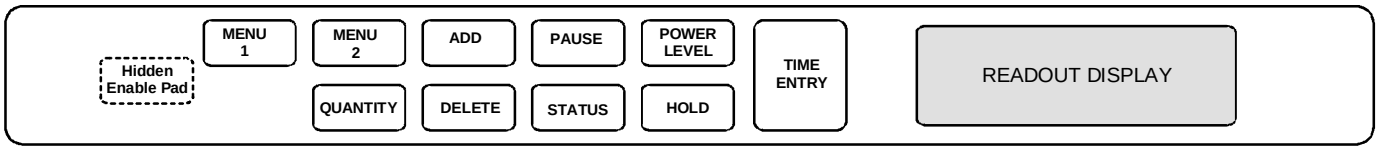
Electrical Power Cord



Equipment requires a
230 VAC, 50 Hz, 16 amp power supply

Do not use a extension cord. If the product power cord is too short, have a qualified electrician install a three-prong receptacle. This unit should be plug into a separate 230 VAC / 50 Hz power supply. If other equipment is on the same circuit, an increase in cooking times may be required and fuse can be blown.

Operating Instructions



Control Panel Pads

MENU 1 or MENU 2
Use for independent cooking programs.

ADD
Use to make a change to preset number pads.

PAUSE
Use to interrupt microwave operation halfway through cooking stage. Manipulate food during pause. Not available during *Variable Time Entry* cooking.

POWER LEVEL
Use to select power level. If no power level is selected, oven operates at 100 percent power.

QUANTITY
Use to select a quantity greater than one.

DELETE
Use to delete preprogrammed number pads, current heating stages, and power levels.

STATUS
Use in optional programming to change options. Press to move through stages 1–4 of programming.

HOLD
Use to operate oven with no microwave energy for programmed time.

TIME ENTRY
Use to bypass preset number pads.

Pads *1–0*
Use to start a cooking sequence for preset programs. Press pads (press directly on number) for *Variable Time Entry* and reduced power cooking.

START
Use to start *Variable Time Entry* program or restart interrupted cooking cycle.

STOP/RESET
Use to exit programming mode and stop cooking during cooking cycle.

Readout Display

"EOC" (End of Cycle)
Lights at end of cooking cycle.

"PAUS" (Pause) indicator
Lights during cooking pause.

"P"
Displays at programming entry point when programming mode is entered. Lights when viewing stage with an enabled pause.

"POWER"
Lights when microwave energy is generated.

"COOK LEVEL"
Lights when viewing stage with reduced power or hold. Power level digit or "H" for hold displays.

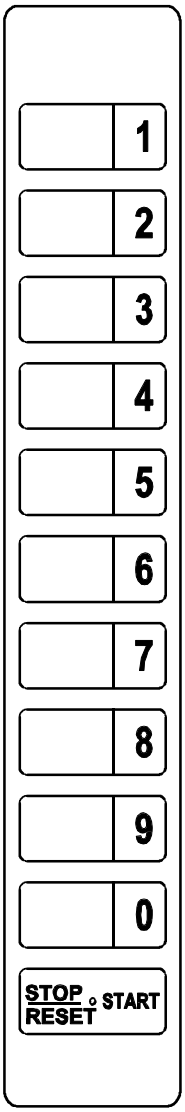
"MENU 1" or "MENU 2"
Lights active menu.

"ITEM"
Flashes when pads accept entries. Lights when number is pressed to select item.

"LMT" (Limit)
Flashes when either user time limit or maximum time limit is exceeded.

"QTY" (Quantity)
After *QUANTITY* pad is pressed, indicator flashes until desired quantity is entered or 15 second time limit expires. Shows during cooking cycle when quantity greater than one is selected.

"STG" (Stage)
Lights when multiple cooking stages exist for the selected item.



Operating Instructions

Preprogrammed Pads

Oven contains two menus with 10 preset number pads each. Heating times and power levels can be adjusted to fit menu requirements.

Number pads come preprogrammed from factory to operate at full power for following times. *MENUS 1* and *2* pads are programmed identically at factory.

Pad	Cooking Time
1	10 seconds
2	20 seconds
3	30 seconds
4	45 seconds
5	1 minute
6	1 1/2 minutes
7	2 minutes
8	3 minutes
9	4 minutes
10	5 minutes

Instructions are written for factory programmed ovens. Ovens that are reprogrammed may respond differently than described below.

Cook Levels and Hold

Set oven to cook using between 10 and 100 percent cooking power. If food requires time between cooking cycles without microwave energy, use *HOLD* pad.

When *HOLD* pad is used, oven operates for cooking stage without producing microwave energy.

Interrupting Operation

- Open oven door to interrupt operation. Blower continues to operate. Close door and press *START* pad to resume oven operation and countdown timing.

If preset pad is pushed immediately after door is opened and closed, a slight delay occurs before oven starts and timing countdown begins.

- Press *RESET* pad to interrupt operation. Display continues to show countdown time. Press *START* pad to resume oven operation and countdown timing.

Continuing after Pause

If oven is programmed to pause in middle of cooking cycle, oven signals 3 times and shows “PAUS”. When oven pauses, open door, manipulate food, close door, and press *START* pad to continue operation.

- If oven fan is operating during pause, press *START* pad to resume operation, without opening oven door or manipulating food.
- If oven fan is not operating during pause, open oven door and press *START* pad to resume operation.

Cancelling Mistakes

- If oven is not operating, press *RESET* pad to clear display.
- If oven is operating, press *RESET* pad once to stop oven, then again to clear display.

Operating Preprogrammed Pads

1. Open oven door and place food in oven. Display shows “door”.
   - Fan and light operate.
2. Close oven door. Display shows “MENU” and “ITEM” flashes.
   - If oven display does not show “ITEM”, pads do not except entries. Open and close oven door or press *STOP/RESET* pad to activate pads.
3. Press desired menu pad if different than display.
4. Press *QUANTITY* pad to increase quantity if greater than 1.
   - Cooking times are calculated automatically.
5. Press desired number pad and oven operates.
   - Display shows item selected and heating time counts down.
   - Display shows “POWER” when microwave energy is present.
6. Oven stops and signal sounds when timing sequence is finished.
   - Display shows "EOC".
7. Open oven door.

Summary of Operating Preprogrammed Pads

1. Open oven door and place food in oven.
2. Close oven door.
3. Press *QUANTITY* pad if desired quantity is greater than one.
4. Enter desired item number.
5. At end of cycle, open oven door.

Operating Instructions

Variable Time Entry

1. Open oven door and place food in oven. Display shows “door”. Fan and light operate.
2. Close oven door. Display shows “MENU” and “ITEM” flashes.
   - If oven display does not show “ITEM”, pads do not except entries. Open and close oven door or press *STOP/RESET* pad to activate pads.
3. Press *TIME ENTRY* pad. Display shows “0000”.
4. Press number pads to enter desired cooking time.
5. Press *POWER LEVEL* pad if power level other than 100 percent is required. Display shows “COOK LEVEL” and current power level if other than 100 percent power.
6. Press number pad to enter desired power level. For example, pressing *2* pad is 20 percent power.
7. Press *START* pad and oven operates. Display shows “POWER” when microwave energy is present. If power level other than 100 percent power was programmed, display shows “COOK LEVEL” and power level. Display counts down cooking time.
8. Oven stops and signals when timing sequence is finished. Display shows “EOC”.
9. Open oven door and remove food.

Summary of Variable Time Entry

1. Open oven door and place food in oven.
2. Close oven door.
3. Press *TIME ENTRY* pad.
4. Enter desired cooking time. If 100 percent power is desired, proceed to step 7.
5. Press *POWER LEVEL* pad.
6. Enter desired power level.
7. Press *START* pad.
8. At end of cycle, open oven door.

Changing Preset Number Pads

1. Open oven door. Display shows “door”.
   - If door is closed or *RESET* pad is pressed before finishing programming sequence, oven exits programming mode.
2. Press pad *1* for five seconds. After five seconds, signal sounds. Display shows “P” and active menu.
3. Press *ADD* pad.
4. Press desired menu pad. Display shows active menu.
5. Press desired number pad. Display shows selected number pad, “ITEM”, heating time, “COOK LEVEL” and power level (if other than 100 percent power) for stage one.
   - If multiple stages exist, display shows “STG” and number of programmed stages.
6. Press number pads to enter desired cooking time.
7. Press *POWER LEVEL* pad if power level requires change. Display shows “COOK LEVEL” and current power level (if other than 100 percent power).
8. Press number pad to enter desired power level. Display shows new power level (if other than 100 percent power). For example, pad *2* is 20 percent power.
9. Press *START* pad to enter new heating time and power level in oven memory. Display shows “P”.
10. Press *RESET* pad or close oven door to exit programming mode.

Summary of Changing Preset Number Pads

1. Open oven door.
2. Press pad *1* for five seconds.
3. Press *ADD* pad.
4. Press desired menu pad.
5. Press desired number pad.
6. Enter desired cooking time.
7. Press *POWER LEVEL* pad if power level other than 100 percent is desired. Enter desired power level.
8. Press *START* pad.
9. Press *RESET* pad or close oven door.

Programming Instructions

Programming Multiple Stages

1. Open oven door. Display shows “door”.
   - If door is closed or *RESET* pad is pressed before finishing programming sequence, oven exits programming mode.
2. Press pad *1* for five seconds. After five seconds, signal sounds. Display shows “P” and active menu.
3. Press *ADD* pad.
4. Press desired menu pad. Display shows active menu.
5. Press desired number pad. Display shows selected number pad, “ITEM”, heating time, “COOK LEVEL” and power level (if other than 100 percent power) for stage one.
   - If multiple stages exist, display shows “STG” and number of programmed stages.
6. Press number pads to enter desired cooking time.
7. Press *POWER LEVEL* pad if power level requires change. Display shows “COOK LEVEL” and current power level (if other than 100 percent power).
8. Press number pad to enter desired power level. Display shows new power level if other than 100 percent power. For example, pad *2* is 20 percent power.
9. Press *STATUS* pad to advance to next stage. Display shows “P(1-4)” for one second followed by time and power level (if other than 100 percent power) for selected stage.
   - “P” represents program and is followed by current stage.
10. Repeat steps 6–9 for additional stages.
11. Press *START* pad to enter new heating time and power level in oven memory. Display shows “P”.
12. Press *RESET* pad or close oven door to exit programming mode.

Summary of Programming Multiple Stages

1. Open oven door.
2. Press pad *1* for five seconds.
3. Press *ADD* pad.
4. Press desired menu pad.
5. Press desired number pad.
6. Enter desired cooking time and power level if power level other than 100% is desired.
7. Press *STATUS* pad.
8. Enter desired cooking time and power level.
9. Repeat steps 6–9 for additional stages.
10. Press *START* pad.
11. Press *RESET* pad or close oven door.

Programming Pause during Stage(s)

Pause cooking during each or any stage to manipulate food. Pause occurs halfway through stage.

1. Open oven door. Display shows “door”.
   - If door is closed or *RESET* pad is pressed before finishing programming sequence, oven exits programming mode.
2. Press pad *1* for five seconds. After five seconds, signal sounds. Display shows “P” and active menu.
3. Press *ADD* pad.
4. Press desired menu pad. Display shows active menu.
5. Press desired number pad. Display shows selected number pad, “ITEM”, heating time, “COOK LEVEL” and power level (if other than 100 percent power) for stage one.
   - If multiple stages exist, display shows “STG” and number of programmed stages.
6. Press number pads to enter desired cooking time.
7. Press *POWER LEVEL* pad if power level requires change. Display shows “COOK LEVEL” and current power level if other than 100 percent power.
8. Press number pad to enter desired power level. Display shows new power level if other than 100 percent power. For example, pad *2* is 20 percent power.
9. Press *PAUSE* pad.
   - Press *STATUS* pad and repeat steps 5–9 for additional stages.
10. Press *START* pad to enter new heating time and power level in oven memory. Display shows “P”.
11. Press *RESET* pad or close oven door to exit programming mode.

Summary of Programming Multiple Stages

1. Open oven door.
2. Press pad *1* for five seconds.
3. Press *ADD* pad.
4. Press desired menu pad.
5. Press desired number pad.
6. Enter desired cooking time and power level.
7. Press *PAUSE* pad.
8. Press *START* pad.
9. Press *RESET* pad or close oven door.

Programming Instructions

Programming Hold during Stage(s)

Hold food without microwave power during one or any stage.

1. Open oven door. Display shows “door”.
   - If door is closed or *RESET* pad is pressed before finishing programming sequence, oven exits programming mode.
2. Press pad *1* for five seconds. After five seconds, signal sounds. Display shows “P” and active menu.
3. Press *ADD* pad.
4. Press desired menu pad. Display shows active menu.
5. Press desired number pad. Display shows selected number pad, “ITEM”, heating time, “COOK LEVEL” and power level (if other than 100 percent power) for stage one.
   - If multiple stages exist, display shows “STG” and number of programmed stages.
6. Press number pads to enter desired hold time.
7. Press *POWER LEVEL* pad.
8. Press *HOLD* pad.
   - Press *STATUS* pad and repeat steps 6–9 of *Programming Multiple Stages* section for additional stages.
9. Press *START* pad to enter new time and power level in oven memory. Display shows “P”.
10. Press *RESET* pad or close oven door to exit programming mode.

Summary of Programming Multiple Stages

1. Open oven door.
2. Press pad *1* for five seconds.
3. Press *ADD* pad.
4. Press desired menu pad.
5. Press desired number pad.
6. Enter hold time.
7. Press *POWER LEVEL* pad.
8. Press *HOLD* pad.
9. Press *START* pad.
10. Press *RESET* pad or close oven door.

Deleting Cooking Stages

1. Open oven door. Display shows “door”.
   - If door is closed or *RESET* pad is pressed before finishing programming sequence, oven exits programming mode.
2. Press pad *1* for five seconds. After five seconds, signal sounds. Display shows “P” and active menu.
3. Press desired number pad to be deleted.
4. Press *DELETE* pad twice. All cooking stages and power levels for this item are set to zero. Display shows “P”.
5. Press *RESET* pad or close oven door to exit programming mode.

Summary of Deleting Cooking Stages

1. Open oven door.
2. Press pad *1* for five seconds.
3. Press desired menu pad.
4. Press desired number pad to be deleted.
5. Press *DELETE* pad twice.
6. Press *RESET* pad or close oven door.

Modifying User Time Limits

A user defined time can limit each set of programs associated with each available menu pad. For example, if user time limit for MENU 1 is 30 minutes, total cook time of all available stages for a single number pad can not exceed 30 minutes.

1. Complete steps 1–3 of *Changing User Options*.
2. Press desired menu pad to change. Display shows active menu and present user time limit.
3. Press numbers to enter desired user time limit. Display shows new user time limit.
4. Press corresponding menu pad again to save user time limit. For example, if changing heating time limit for MENU 1, press *MENU 1* pad.
5. Press *RESET* pad or close oven door to exit programming mode.

Summary of Modifying User Time Limits

1. Open oven door.
2. Press pad *1* for five seconds.
3. Press hidden enable pad.
4. Press desired menu pad to change.
5. Enter desired heating time limit.
6. Press corresponding menu pad.
7. Press *RESET* pad or close oven door.

Programming Instructions

Changing User Options

1. Open oven door. Display shows “door”.
   - If door is closed or *RESET* pad is pressed before finishing programming sequence, oven exits programming mode.
2. Press pad *1* for five seconds. After five seconds, signal sounds. Display shows “P” and active menu.
3. Press hidden enable pad. Locate hidden enable pad to immediate left and slightly down from *MENU 1* pad. Displays shows “OP:1(1-3)”.
   - ”OP” represents optional program mode, first number represents option number and second number represents functions currently selected for option.
4. Press *START* pad to advance to other options. See table for options.

Option	Description	Code
End-of-cycle signal tone	Off	OP:10
	Continuous tone*	OP:11
	5 continuous tones	OP:12
	5 tones, 5 cycles	OP:13
Tone when pad is pressed	Off	OP:20
	On*	OP:21
Control panel resets when door is opened	Off*	OP:30
	On	OP:31
End-of-cycle signal	Loud*	OP:40
	Medium	OP:41
User time limit	Off	OP:50
	On*	OP:51

*As shipped from factory

5. Press *STATUS* pad to change option. Press *START* pad to save changes.
6. Repeat steps 4–5 to change additional options.
7. Press hidden enable pad to return to programming mode. Press *RESET* pad or close oven door to exit programming mode.

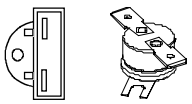
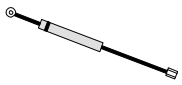
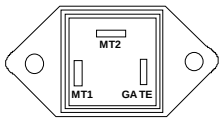
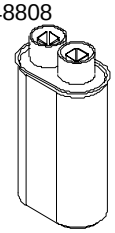
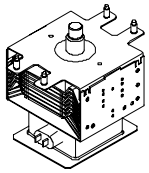
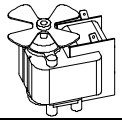
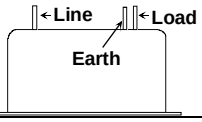
Summary of Optional Programs

1. Open oven door.
2. Press *1* pad for five seconds.
3. Press hidden enable pad.
4. Press *START* pad to review options.
5. Press *STATUS* pad to change option.
6. Repeat steps 4–5 to change additional options.
7. Press hidden enable pad to return to programming mode.
8. Press *RESET* pad or close oven door.

Component Testing Procedures

⚠ WARNING

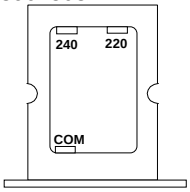
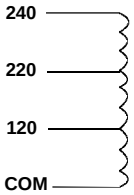
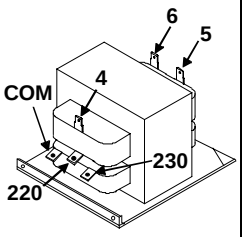
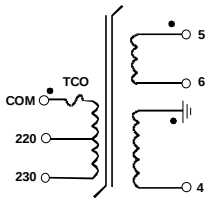
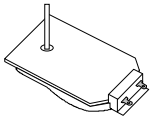
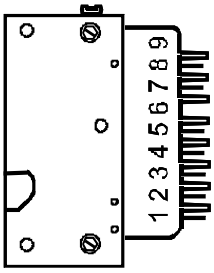
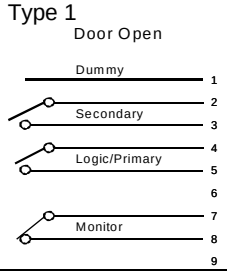
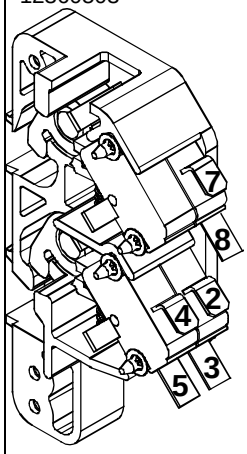
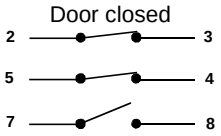
To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitor before servicing, unless testing requires it.

Illustration	Component	Testing	Results
	Thermal Cutout B5795306 ..... B5684118 ..... B5684106	Disconnect all wires from TCO. Measure resistance across terminals. Cavity Thermal Fuse ..... Control TCO..... Magnetron TCO	 Open at 262°F (128°C) Open at 280°F and closed at 180°F Open at 280°F and closed at 180°F
B8383102 	Diode Assembly	**Discharge Capacitors** Remove diode lead from capacitor and connect ohmmeter. Reverse leads for second test.	Infinite resistance should be measured in one direction and 50KΩ or more in the opposite direction. **NOTE:** Analog meter must contain a battery of 6 volts minimum.
D7681501 	Triac	Disconnect wires to triac. Measure resistance from: MT1 to MT2 MT1 to Gate MT2 to Gate All terminals to ground	**Caution - Do not operate oven with wire to terminal MT2 removed.** Infinite Approximately 40 Ω or more Infinite Infinite
12548808 	Capacitor	**Discharge Capacitors** Remove wires from capacitor terminals and connect ohmmeter, set on highest resistance scale to terminals. Also check between each terminal and capacitor case.	 Between Terminals: Meter should momentarily deflect towards zero then return to over 5 MΩ. IF no deflection occurs, or if continuous deflection occurs, replace capacitor. Terminal to Case: Infinite resistance
10172901Q 	Snubber Assembly	Disconnect wires to snubber. Measure resistance across terminals.	 Infinite
D7831006 	Magnetron	**Discharge Capacitors** Remove wires from magnetron and connect ohmmeter to terminals. Also check between each terminal and ground.	Between Terminals: Less than 1 Ω Each terminal to ground measures Infinite resistance. **Note:** This test is not conclusive. If oven does not heat and all other components test good replace the magnetron and retest.
10773303 	Blower Motor	Remove all wires from motor. Measure resistance across coil.	 Approximately 30 Ω
10976702 	Line filter	Line to Line Load to Load Line to Load Any terminal to Earth	.8 M Ω .8 M Ω Continuity Infinite
Wire Harness		Test continuity of wires.	Indicates continuity

Component Testing Procedures

⚠ WARNING

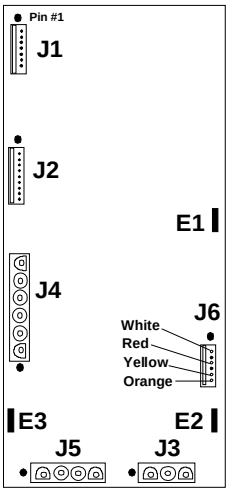
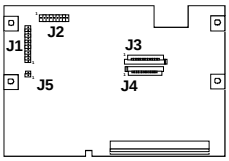
To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitor before servicing, unless testing requires it.

Illustration	Component	Testing	Results
C8901508 	Auto transformer 	**Discharge Capacitor** Remove all wires from terminals, and measure resistance from: 220 to 0 240 to 0 220 to 240 240 to earth 220 to earth 0 to earth	 Approximately 55 ohms. Approximately 55 ohms. Approximately 1.5 ohms. Infinite Infinite Infinite.
10788609 	Transformer 	**Discharge Capacitor** Remove all wires from terminals, and measure resistance from: 220 to Common 230 to Common Terminal 5 to 6 Terminal 4 to Earth screw on transformer Terminal 4 to any other terminal	This transformer is equipped with a 155°C thermal cutout Approximately 1.3 Ω Approximately 1.3 Ω <1 Ω 70 Ω Infinite resistance should be indicated, if not replace transformer.
R0150102 	Antenna motor	Remove all wires from motor. Measure resistance across terminals.	 Approximately 10 KΩ
R0150155 	Interlock switch Type 1 	Disconnect wires to switch With door open measure resistance from: Terminal 2 to terminal 3 Terminal 4 to terminal 5 Terminal 7 to terminal 8 With door closed measure resistance from: Terminal 2 to terminal 3 Terminal 4 to terminal 5 Terminal 7 to terminal 8	 Infinite Ω Infinite Ω Indicates continuity Indicates continuity Indicates continuity Infinite Ω
12360503 	Interlock switch assembly Type 2 	Disconnect wires to switch. With door open measure resistance from: Terminal 2 to 3 Secondary Terminal 4 to 5 Primary Terminal 7 to 8 Monitor With door closed measure resistance from: Terminal 2 to 3 Secondary Terminal 4 to 5 Primary Terminal 7 to 8 Monitor	 Infinite Infinite Indicates continuity Indicates continuity Indicates continuity Infinite

Component Testing Procedures

⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitor before servicing, unless testing requires it.

Illustration	Component	Testing	Results
10763208 	High voltage board J6 connections 1–White 2–Open 3–Red 4–Open 5–Yellow 6–Orange	Connector Plugged-In J2—Pin 5 (violet) to ground J2—Pin 6 J2—Pin 7 (blue) to ground J6—Pin 6 (orange) to Pin 1 (white) J6—Pin 5 (yellow) to Pin 1 (white) J6—Pin 1 (white) to Pin 3 (red)	 –27 VDC Ground +18 VDC 240 volts—output to blower and antenna motors when line voltage is 240 V 220 volts—output to auto transformer for blower and antenna motors when line voltage is 220 V Line voltage
12261708 	Low voltage board	Connector Plugged-In J2—Pin 5 (violet) to ground J2—Pin 6 J2—Pin 7 (blue) to ground J3 connector is for lower keyboard ribbon. J4 connector is for upper keyboard ribbon.	–27 VDC Ground +18 VDC

Component Testing Procedures

⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitors before servicing, unless testing requires it.

Top Touch Panel

To test touch panel for proper operation:

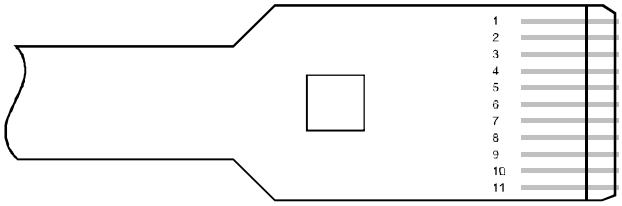
1. Identify ribbon traces for selected touch panel using chart.
2. Resistance between selected traces = 0 ohms.
3. Pressing touch panel, resistance between selected traces is less than 60 ohms.
4. With touch panel pressed resistance from both traces to traces 1 & 2 should be about 0 ohms.

Keypad	Ribbon Trace	Ribbon Trace
Menu 4/Quantity	11	10
Menu 3	11	8* \ 3**
Pause	10	5
Delete	10	4
Status	10	3
Menu 1	9	8
Menu 2	9	7

Keypad	Ribbon Trace	Ribbon Trace
Power Level	9	5
Time Entry	8	7
Hold	7	6
Enable	7	5
Add	4* \ 5**	3* \ 4**

* = P1199603M

** = P1199604M



Ribbon Cable

Side Touch Panel

Keypad	Ribbon Trace	Ribbon Trace
Stop/Reset	3* \ 1**	4* \ 2**
0	4	5
Start	4	10
8	5	6
9	5	10

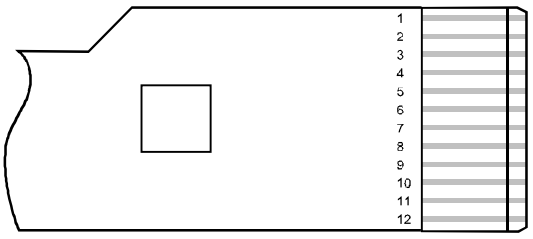
Keypad	Ribbon Trace	Ribbon Trace
6	6	7
7	6	10
4	7	8
5	7	10
2	8	9
3	8	10
1	9	10

* = P1199603M

** = P1199604M

To test touch panel for proper operation:

1. Identify ribbon traces for selected touch panel using chart.
2. Resistance between selected traces = 0 ohms.
3. Pressing touch panel, resistance between selected traces is less than 60 ohms.
4. With touch panel pressed resistance from both traces to traces 11 &12 should be about 0 ohms.



Ribbon Cable

Display Diagnostics

⚠ CAUTION

All repairs as described in this troubleshooting guide section are to be performed only after the caution procedures one through six listed below have been followed.

1. Check earthing before checking for trouble.
2. Be careful of the high voltage circuit.
3. Discharge high voltage capacitor.
4. When checking the continuity of the switches or the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.
5. Do not touch any parts of the circuitry on the P.C. Board circuit since static electric discharge may damage this control panel. Always touch yourself to earth while working on this panel to discharge any static charge in your body.
6. 220/240 Vac is present in the high voltage board terminals of power relay and primary circuit of low voltage transformer.
7. When troubleshooting, be cautious of possible electrical hazard.

Service Codes

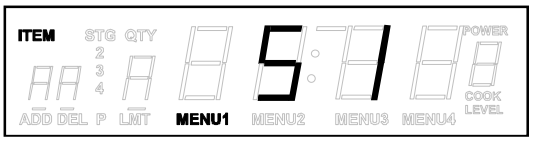
During operation, the display may show the following service codes:

Service Codes	Explanation
S1	Watchdog - Membrane Touch Panel
CS	Current Sense
FL	Low Current
FH	High Current
PL	Power Level
PCE1	Checksum - Check Permanent Memory
PCE5	Communication Failure
PCE6	Communication Failure
HOT	Magnetron Overheating
HI	High Line Voltage
LO	Low Line Voltage

Display Diagnostics

S1 Watchdog - Membrane Touch Panel

Watchdog circuit verifies touch panel entry.



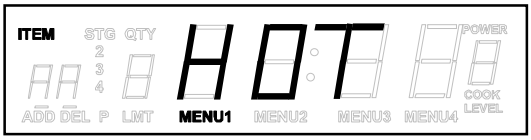
Possible Causes:

1. Shorted top touch panel.
2. Shorted side touch panel.

Testing

1. Disconnect power from oven.
2. Disconnect one touch panel ribbon cable from the L.V. circuit board.
3. Plug oven in, open and close door to activate oven.
4. Wait approximately 60 seconds. If "S1" does not appear in display, replace the disconnected touch panel.
5. If "S1" re-appears in display, disconnect the other touch panel and repeat steps 3 and 4.

HOT Magnetron Overheating

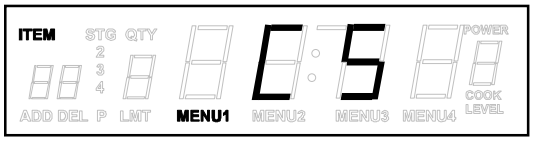


When "HOT" is displayed, the blower motor should be operating.

Possible Causes:

1. Restricted air filter.
2. High ambient temperature.
3. Oven operated empty or with light loads.
4. Open control TCO.
5. Inoperative blower motor/wheel.
6. Open/loose TCO ground wire.
7. Open/loose E1 ground wire at H.V. board.
8. Inoperative high voltage board.

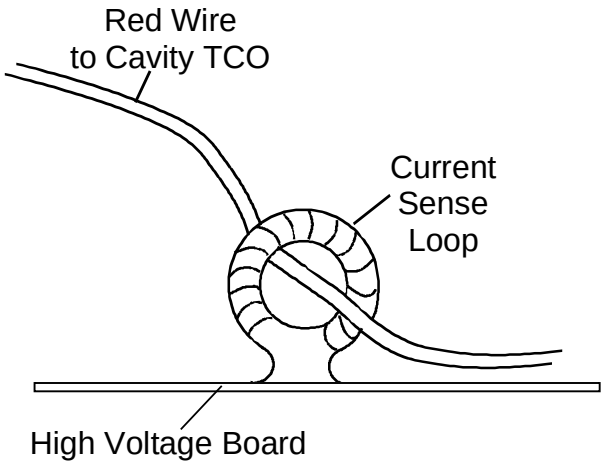
CS Current Sense



Current Sense – Indicates control is sensing low current (Amp) draw. Check components which would allow unit to run but produce no heat or low heat. Current sense circuit is active only when using pre-programmed pads. Time Entry feature will by-pass current sense circuit. Red wire from cavity T.C.O. must be routed through current sense loop on H.V. Board.

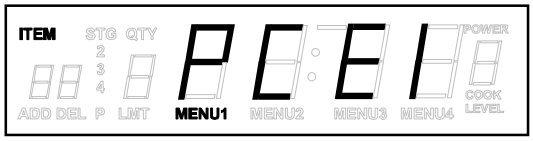
Possible Causes:

1. Interlock switch (contacts 2 & 3).
2. Open thermal cut-out (magnetron).
3. Open/loose wire.
4. Power relay.
5. H.V. Board.
6. Magnetron.
7. Diode.
8. Capacitor.
9. Transformer.
10. Triac.



Display Diagnostics

PCE1 Checksum

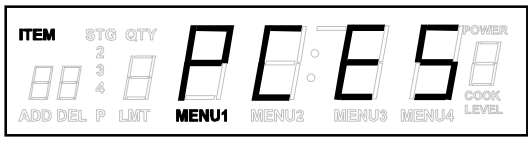


NOTE: Before scheduling service for this complaint, instruct customer to unplug oven for one minute, reconnect, and retest. If unit operates properly, no further service is required.

If this error code does not disappear possible causes are:

1. Inoperative low voltage board.

PCE5 Communication Failure

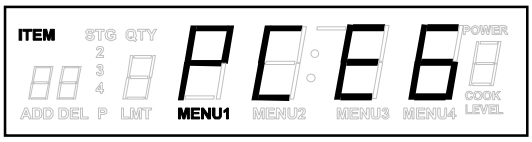


NOTE: Before scheduling service for this complaint, instruct customer to unplug oven for one minute, reconnect, and retest. If unit operates properly, no further service is required.

If this error code does not disappear possible causes are:

1. Broken or improper wire connection between high voltage board and low voltage board.
2. Inoperative cable between low voltage board and extended memory board.
3. Inoperative high voltage board.
4. Inoperative low voltage board.
5. Inoperative extended memory board.

PCE6 Communication Failure

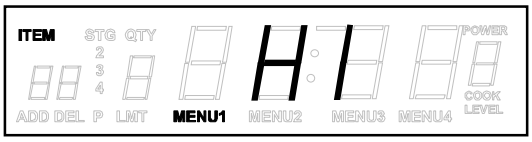


NOTE: Before scheduling service for this complaint, instruct customer to unplug oven for one minute, reconnect, and retest. If unit operates properly, no further service is required.

If this error code does not disappear possible causes are:

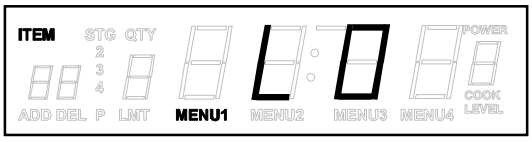
1. Broken or improper wire connection between high voltage board and low voltage board.
2. Inoperative cable between low voltage board and extended memory board.
3. Inoperative high voltage board.
4. Inoperative low voltage board.
5. Inoperative extended memory board.

HI High Line Voltage



1. Input voltage over 270 VAC.
2. Inoperative high voltage board.

LO Low Line Voltage



1. Input voltage less than 185 VAC.
2. Inoperative low voltage board.

Service Test

The high voltage portion of these models contain multiple H.V. systems.

Each H.V. System contains the following:

- 1 Magnetron
- 1 H.V. Transformer
- 1 Capacitor
- 1 Diode
- 1 Triac
- Connecting wiring

Each H.V. system may be operated independently for diagnostic purposes.

During this test the display will show a number (usually between 8 and 24 for each H.V. system operating) signifying some current draw of the unit.

This is *not* showing actual amperage, but a current reference.

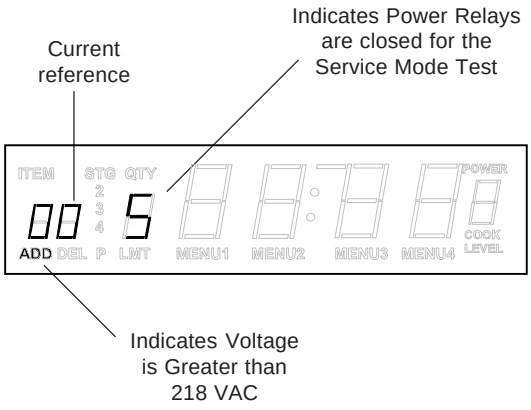
Accessing Service Test Mode

1. Open door and place 1000 ml water load in oven.

NOTE: Perform the following 4 steps within **15 seconds** or this procedure will be cancelled.

2. Press ***DELETE***,
3. Press ***1, 3, 5, 7.***
4. Close door.
5. Press ***DELETE***.

NOTE: Pressing *RESET* at any time will cause the control to exit the Service Test.

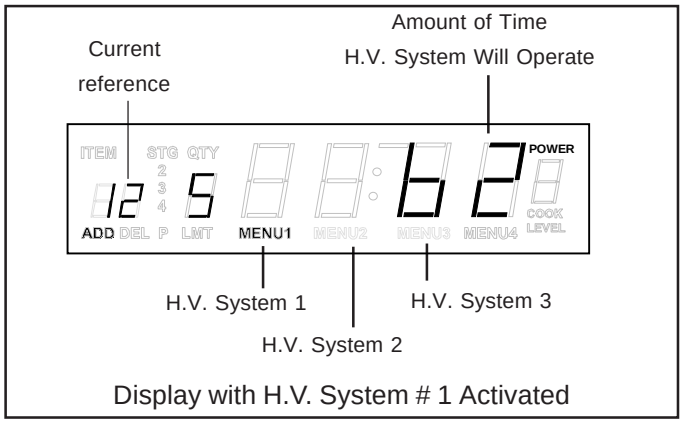


Initial Display in Service Test Mode

H.V. System Test

When Service Test Mode has been accessed, the H.V. system test must be started within **60 seconds** to assure accurate test readings. **The door must be closed.**

1. Press pad *1* to activate H.V. System # 1.
   - The triac drive will be activated after a minimum of 100 milliseconds.
   - A 62 seconds full power cook cycle will begin for the selected H.V. system.



Display with H.V. System # 1 Activated

2. Press pad *1* again to de-activate H.V. System # 1.
3. Press pad *2* to activate H.V. System # 2.
4. Press pad *2* again to de-activate H.V. System # 2.
5. Press pad *3* to activate H.V. System # 3.
6. Press pad *3* again to de-activate H.V. System # 3.

Diagnosing Individual H.V. System Components

If the service test indicates a non-functional H.V. system, proceed as follows:

1. Identify the number of the H.V. system that is not functioning and the corresponding magnetron location.
   MENU 1 = Bottom magnetron
   MENU 2 = Top rear magnetron
   MENU 3 = Top front magnetron

NOTE: Component numbering in the wiring/schematic diagrams may not match the numbering of MENU 1, MENU 2 or MENU 3 display indicators.

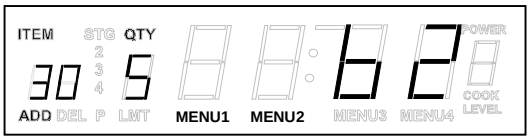
2. Using the wiring diagram, identify the location of components numbered the same as the non-functioning magnetron. H.V. components with the same number are part of the same H.V. system.

Service Test

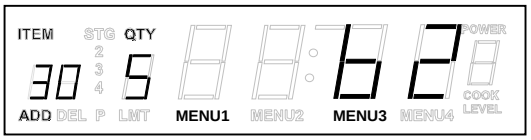
Multiple H.V. System Testing
Two or three H.V. Systems may be tested together. Below are display samples showing different combinations.

NOTE: This is *not* showing actual amperage, but a current reference.

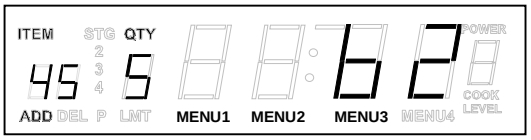
Example: If one H.V. System is showing a current reading of 15, then any two H.V. Systems may have a reading of about 30, and all three H.V. Systems may have a reading of about 45. Current reference readings will vary.



H.V. System 1 & 2



H.V. System 1 & 3



H.V. System 1 , 2, & 3

Door Cycles and Magnetron Hours

- Press *TIME ENTRY* pad once for door cycles.

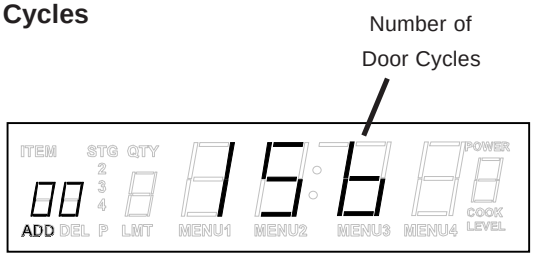
NOTE: Door cycle counter advances one number for every 100 door cycles.

Example:

Display reads 156 x 100 = 15,600 (Actual door cycles)

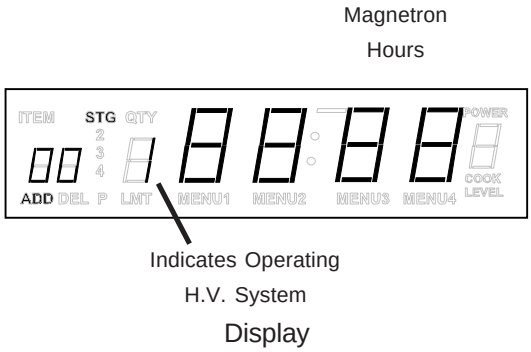
- Press *TIME ENTRY* pad again for H.V. section # 1 hours.
- Press *TIME ENTRY* pad again for H.V. section # 2 hours.
- Press *TIME ENTRY* pad again for H.V. section # 3 hours.
- Press *TIME ENTRY* pad again reverts to door cycles.

Door Cycles



Display

Magnetron Hours



Display

Test Modes

Power Test (Traditional Test Method)

Test equipment required is Amana power test kit R0157397 (Fahrenheit), or
Menumaster power test kit M95D5 (Celsius).

1. Fill the plastic container to the 1000 ml. line with cool tap water.
2. Using the thermometer; stir the water, measure, and record the water temperature.
   Initial water temperature should be approximately 60°F (16°C).
3. Place container on the center of the oven shelf and heat the water for
   33 seconds for ovens with more than 1550 watts or **63 seconds for ovens with less than 1550 watts**.

NOTE: Use a watch second hand, not the oven timer.

4. Stir the water, measure and record the temperature of the water after heating time is complete.
5. Subtract the starting water temperature (Step 2), from the ending water temperature (Step 4) to obtain the temperature rise (ΔT).
6. See the Traditional Power Test Temperature Chart below.

NOTES: •The IEC-705 test method requires precision measurements and equipment. It is not practical to perform the IEC test in the field. To convert the traditional power test results to the approximate IEC-705 rating, take the traditional power test results and add 100 watts per magnetron for the unit being tested.

Example: 1550 — watts output using the traditional power test for model RC519MP
+ 300 — watts (3 magnetrons X 100 watts)
1850 — Approximate IEC-705 results

•Always perform power test three times for accuracy, changing the water after each test is performed.
•Variation or errors in the test procedure will cause a variance in the temperature rise. Additional power tests should be made if temperature rise appears marginal.
•Low line voltage will cause lower temperature rise.

Traditional Power Test Temperature Chart

THIRTY THREE (33) SECONDS run time chart for units more than 1550 Watts cooking power

ΔT (°F)	Cooking Power Output	ΔT (°F)	Cooking Power Output
17	1319	23	1782
18	1395	24	1860
19	1472	25	1937
20	1550	26	2015
21	1627	27	2092
22	1705		

ΔT (°C)	Cooking Power Output	ΔT (°C)	Cooking Power Output
9.5	1330	12.5	1750
10.5	1400	13	1820
10.5	1470	13.5	1890
11	1540	14	1960
11.5	1610	14.5	2030
12	1680	15	2100

SIXTY-THREE (63) SECONDS run time chart for units less than 1550 Watts cooking power

ΔT (°F)	Cooking Power Output	ΔT (°F)	Cooking Power Output
18	697	29	1124
19	736	30	1162
20	775	31	1201
21	814	32	1240
22	852	33	1279
23	891	34	1317
24	930	35	1359
25	969	36	1395
26	1007	37	1434
27	1046	38	1472
28	1085	39	1511

ΔT (°C)	Cooking Power Output	ΔT (°C)	Cooking Power Output
9	630	16	1120
10	700	17	1190
11	770	18	1260
12	840	19	1330
13	910	20	1400
14	980	21	1470
15	1050	22	1540

Microwave Energy Leakage Testing

⚠ WARNING

Check for radiation leakage after servicing. Should the leakage be more than 4mW/cm^2 inform Amana immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and HEW regulations. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while at the customer's location.

Equipment

- Electromagnetic radiation monitor
- 600 cc glass beaker

Procedure For Measuring Radiation Leakage

Note before measuring -

- Do not exceed meter full scale deflection. Leak monitor should initially be set to the highest scale.
- To prevent false readings the test probe should be held by the grip portion of the handle only.
- The scan speed is equal to one inch per antenna revolution or one inch per second if antenna speed is unknown.
- Areas to be checked are all door seal areas and any venting parts.
- Leakage with the outer panel removed, 4mW/cm2 or less.
- Leakage for fully assembled oven with door normally closed, 4mW/cm2 or less.
- Leakage for a fully assembly oven (before the latch switch (primary) is interrupted) while pulling the door, 4mW/cm2 or less.

1 . Pour 275 ± 15 cc (9 oz ± 1/2 oz) of 20 ± 5°C. (68± 9°F.) water in a glass beaker which is graduated to 600 cc and place the beaker in the center of shelf.

2. Set the radiation monitor to 2450 MHz and use it following the manufacturer's recommended test procedure to assure correct results.

3. While measuring the leakage, always use the two inch (5 cm) spacer supplied with the probe.

4. Press the start pad or turn on the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.

Measurement With the Outer Case Removed

⚠ DANGER

To avoid risk of personal injury or death avoid contacting any high voltage components.

Whenever you replace the magnetron, measure for radiation leakage before the outer case is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

Measurement With a Fully Assembled Oven

After all components, including the outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening, and air inlet openings.

Record Keeping and Notification After Measurement

1. After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.

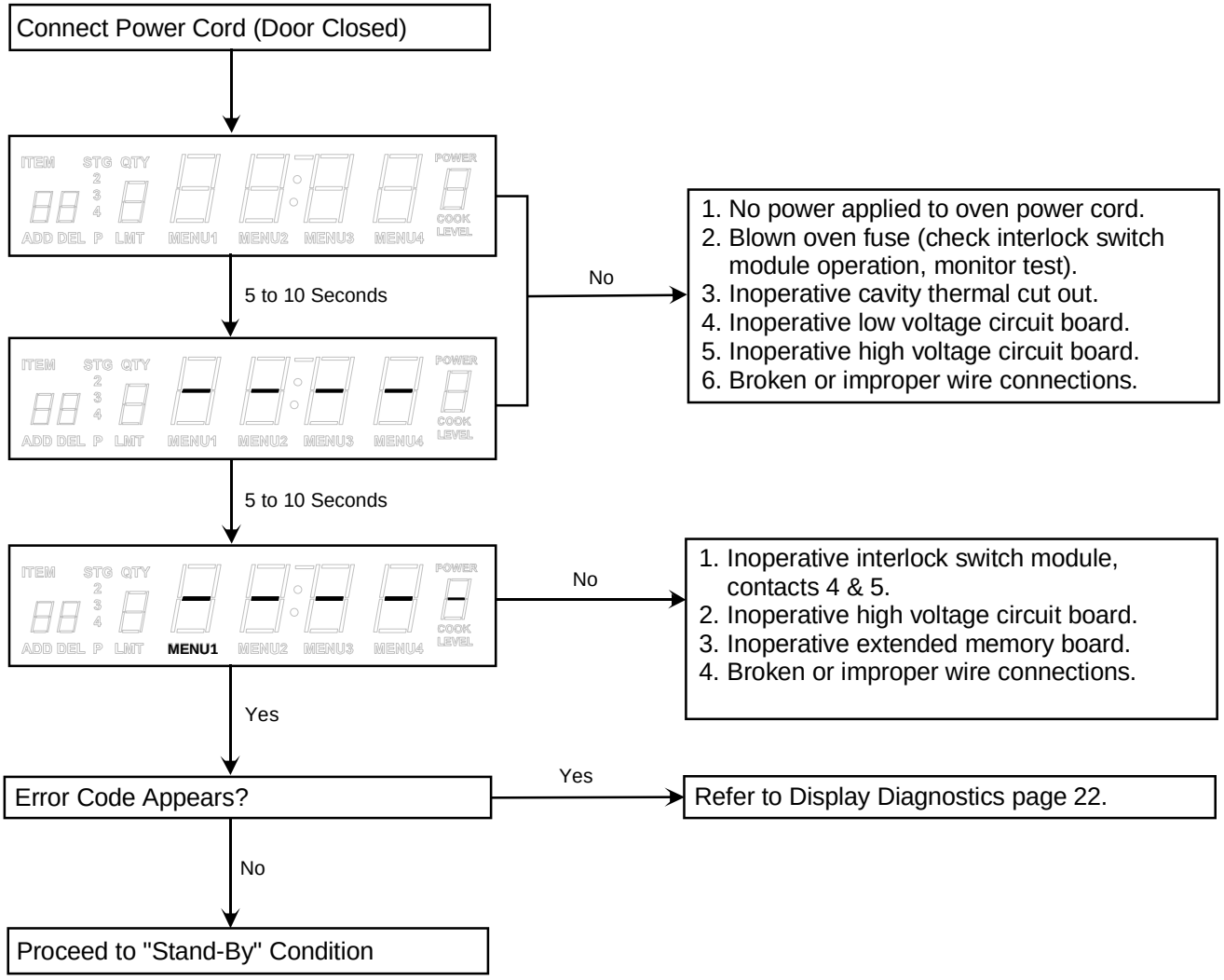
2. A copy of the repair ticket and the microwave leakage reading should be kept by the repair facility.

Troubleshooting

⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitors before servicing, unless testing requires it.

Initial Power Up

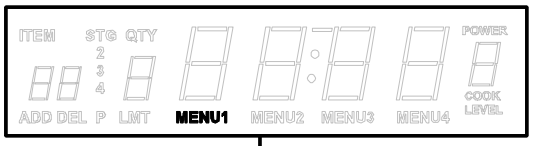

Connect Power Cord (Door Closed)
ITEM STG QTY POWER
2
3
4
ADD DEL P LMT MENU1 MENU2 MENU3 MENU4 COOK LEVEL
5 to 10 Seconds
No
1. No power applied to oven power cord.
2. Blown oven fuse (check interlock switch module operation, monitor test).
3. Inoperative cavity thermal cut out.
4. Inoperative low voltage circuit board.
5. Inoperative high voltage circuit board.
6. Broken or improper wire connections.
5 to 10 Seconds
No
1. Inoperative interlock switch module, contacts 4 & 5.
2. Inoperative high voltage circuit board.
3. Inoperative extended memory board.
4. Broken or improper wire connections.
Yes
Error Code Appears?
Yes
Refer to Display Diagnostics page 22.
No
Proceed to "Stand-By" Condition

Troubleshooting

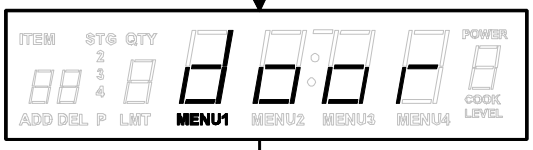
WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitors before servicing, unless testing requires it.

Stand By Condition



Open oven door.



Yes

Oven light is on? (optional)

No

Yes

Antenna motors operate?

No

1. Inoperative autotransformer.
2. Binding or inoperative antenna motor.
3. Binding or inoperative blower motor.
4. Broken or improper wire connections.

Yes

Blower motors operate?

No

Yes

"Stand by Condition" normal - proceed to "Cook Condition".

Troubleshooting

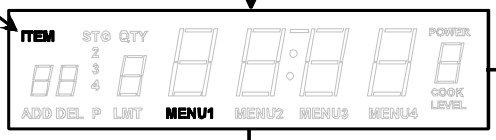
⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitors before servicing, unless testing requires it.

Cook Condition

Place a cup of water in oven and close door.

Flashing



NO

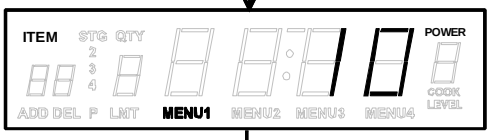
1. Inoperative interlock switch module.
2. Broken or improper wire connections.

Note: *"ITEM"* must be flashing or the door has to be opened and closed to reactivate a cook condition.

Push pad number 1, pad beeps when pushed.

NO

1. Beep not programmed into oven.
2. Inoperative touch panel.
3. Pad not programmed.
4. Door not completely latched.



Display starts counting down?

NO

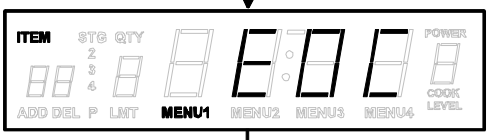
1. Inoperative low voltage board.
2. Inoperative interlock switch module.
3. Broken or improper wire connection.

Note: There will be a 2 to 3 second delay before display begins counting down.

Error code appears after about 8 seconds?

Yes

Refer to Display Diagnostics.



Open oven door.

Water placed in oven is properly heated?

NO

Heats very slowly.

NOTE: Verify by performing power test.

1. One or two inoperative high voltage transformers.
2. One or two inoperative diodes.
3. One or two inoperative capacitors.
4. One or two inoperative magnetrons.
5. Inoperative or misadjusted interlock switch module.
6. One or two inoperative triacs.
7. Inoperative magnetron thermal cutout.
8. Broken or improper wire connection.

No heat.

1. Inoperative or misadjusted interlock switch module.
2. Inoperative magnetron thermal cutouts.
3. Inoperative capacitors.
4. Inoperative autotransformer.
5. Inoperative high voltage board.
6. Inoperative high voltage transformer.
7. Broken or improper wire connections.

Yes

Oven is operating properly.

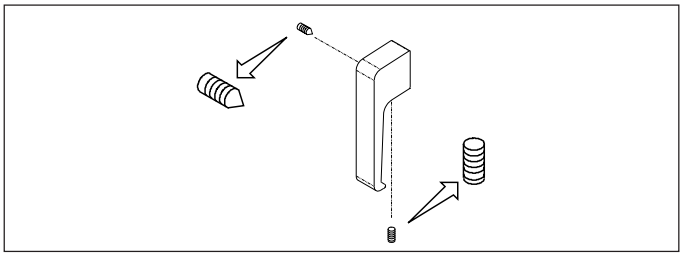
Disassembly

⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitors before following any disassembly procedure.

Latch Handle

The latch handle is removed by loosening the two set screws (3/32 inch allen screws), one located to the left of the latch and one located on the bottom of the latch handle.

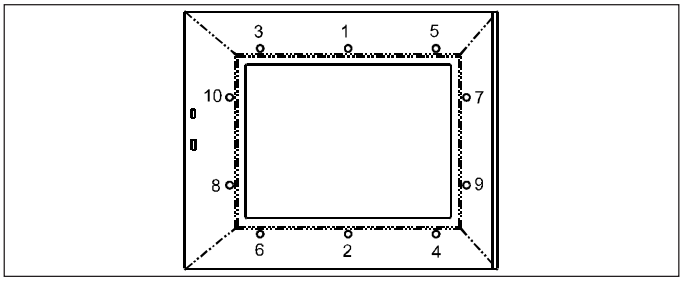


NOTE: If the set screws are removed, the set screw with the flat end must be used in the bottom of the latch handle.

NOTE: When replacing door handle, tighten side set screw first.

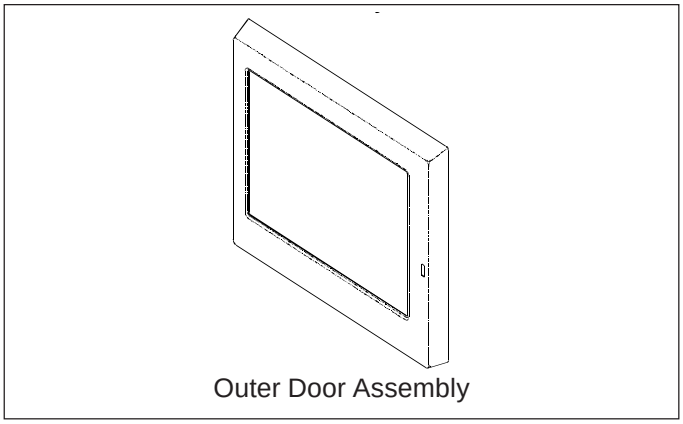
Door

1. Remove latch handle.
2. Remove outer door ring assembly from inner door ring by removing 10 y-drive screws.



NOTE: When reinstalling outer door, tighten screws in pattern as shown above.

Outer Door

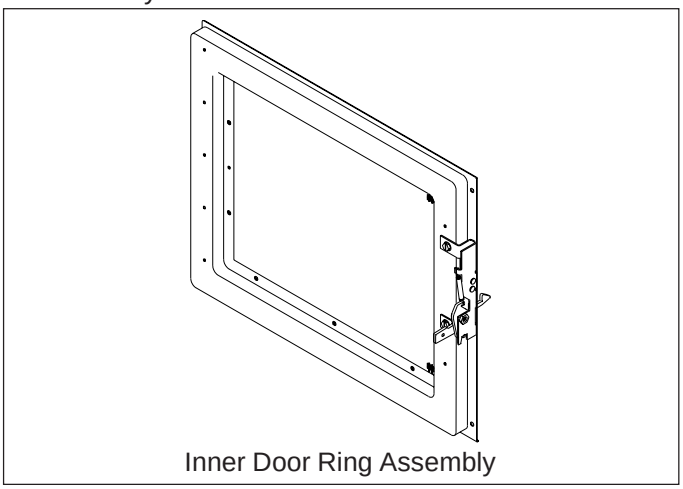


Outer Door Assembly

The outer door assembly consists of the outer door, outer window, and lens retainer. These components are available only as a complete assembly.

Inner Door Ring Assembly

1. Remove latch handle.
2. Remove outer door assembly.
3. Remove 5 hinge screws securing inner door ring assembly.



Inner Door Ring Assembly

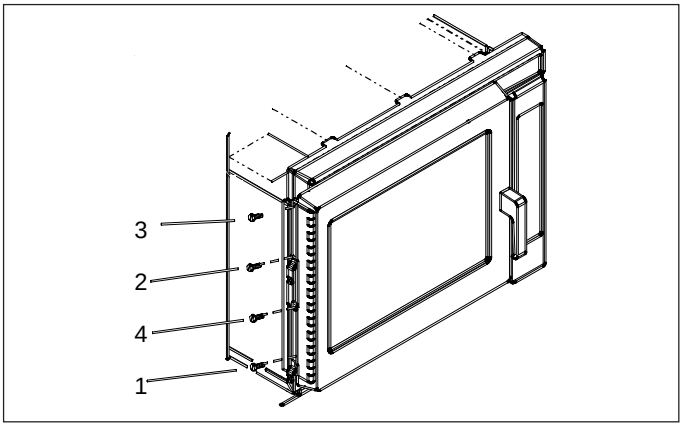
The door ring assembly consists of the inner door ring, the inner door panel, and latch assembly. These components are available only as a complete assembly.

Hinge

1. Remove outer case.
2. Remove door latch handle.
3. Remove outer door assembly.
4. Remove nine hinge mounting screws from hinge (five on front, 4 on side).

NOTE: Reinstall foam gasket on side of hinge when reinstalling.

5. When reinstalling hinge mounting screws, keep the side screws loose and the front screws tight, close door, press door against oven on the hinge side and tighten side hinge mounting screws in the sequence shown below.



Disassembly

⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitors before following any disassembly procedure.

Bottom Shelf

NOTE: The tray is sealed in place with Silicone Rubber.

This type of sealant releases acetic acid and needs curing. The unit should not be used for minimum of one hour after application.

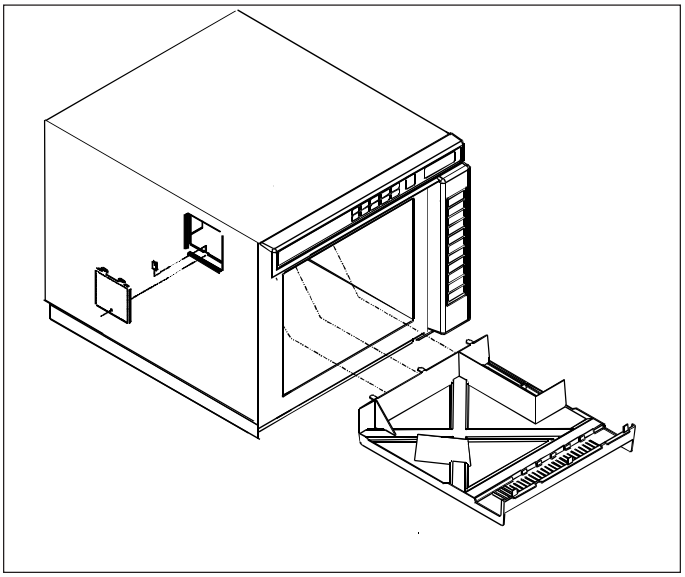
1. Unplug oven from outlet.
2. Open door and using a thin bladed knife, cut seal along edges and remove pieces from unit.
3. Remove any sealant residue and thoroughly clean sump area using a mild detergent.
4. Clean oven cavity bottom where new RTV sealant will make contact using mineral spirits or any nonflammable de-greasing solvent.

NOTE: Detergents, soap, and water are not sufficient to remove oil and grease.

5. Place new tray into unit and seal in place.
6. Allow RTV sealant to cure one hour before using.

Grease Shield

1. Unplug oven before removing grease shield to stop antenna from rotating.
2. Remove shield by placing thumbs in front of shield. Press firmly toward back and carefully lower front of shield away from antenna. Pull shield forward, out of back slots and out of oven.
3. Replace grease shield by fitting tabs into slots at top of oven back. Lift and press front of shield until shield snaps into place.

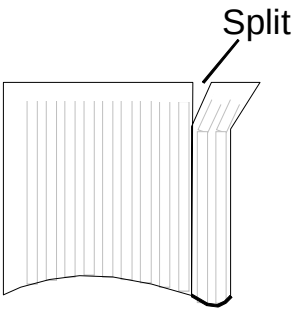


Outer Case

1. Remove screws in side and back.
2. Slide outer case back and lift off.

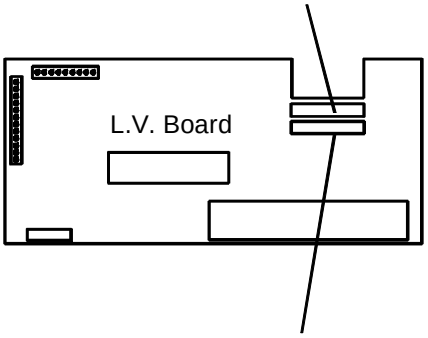
Top Touch Panel Assembly

1. Remove outer case.
2. Remove ribbon cable from low voltage circuit board.
3. Remove screws and lift out.



Ribbon Cable End

Connector -Side Keypad
Split in ribbon cable to the right as facing the front of the unit.



Connector - Top Keypad
Split in ribbon cable to the right as facing the front of the unit.

Side Touch Panel Assembly

1. Remove outer case.
2. Remove ribbon cable from low voltage circuit board.
3. Remove low voltage circuit board.
4. Loosen outer case trim.
5. Remove mounting screw(s).
6. Tilt side touch panel away from oven, release bottom mounting tabs (some models), and remove panel.

Low Voltage Circuit Board

1. Remove outer case.
2. Disconnect ribbon cables.
3. Disconnect connector from back of circuit board.
4. Squeeze clips together to depress the four standoffs and lift board out.

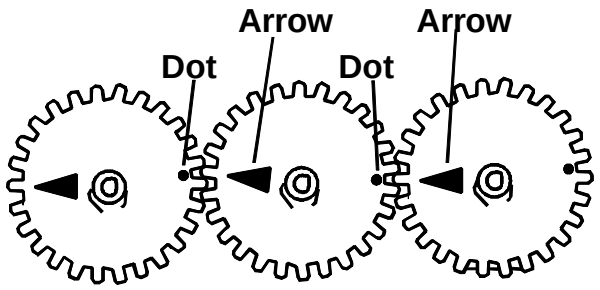
Disassembly

⚠ WARNING

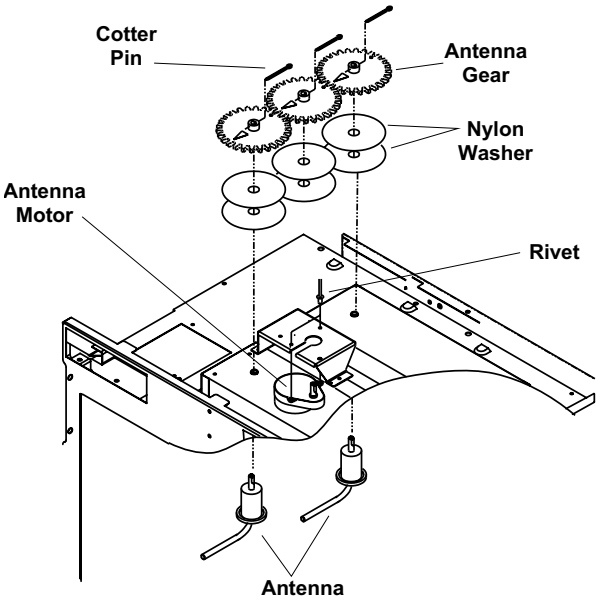
To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitors before following any disassembly procedure.

Top Antennas

1. Remove outer case.
2. Remove grease shield.
3. While holding antenna, remove wire securing antenna to gear at top of unit.
4. Remove antenna.
5. Remove gear.



NOTE: Gears are aligned by aligning the arrows to the dots.



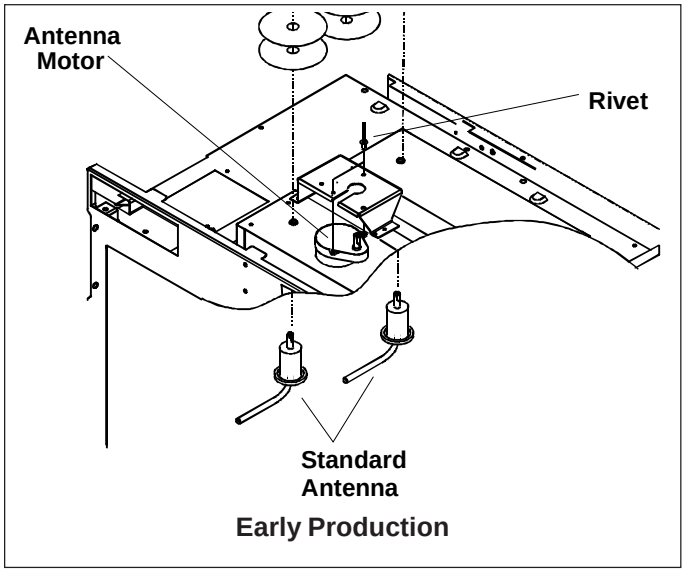
NOTE: Nylon washers must be installed below gears.

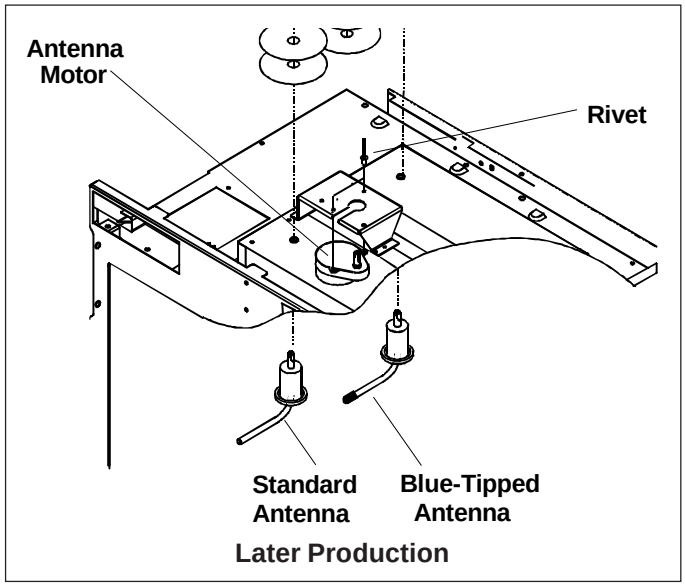
Top Antenna Motor

1. Remove outer case.
2. Remove three antenna gears.
3. Disconnect motor wiring.
4. Remove three stirrer motor bracket mounting rivets. The motor and bracket are replaced as one part.

NOTE: Gears are aligned by aligning the arrows to the dots on gears.

Antenna Matching





⚠ WARNING

When servicing the top antennas, give careful attention to the color of the antenna tip. Part # 10787601 is standard non-colored. Part # 10787602 is blue-tipped. These **antennas are not interchangable**. Refer to Parts Manual for correct application.

Disassembly

⚠ WARNING

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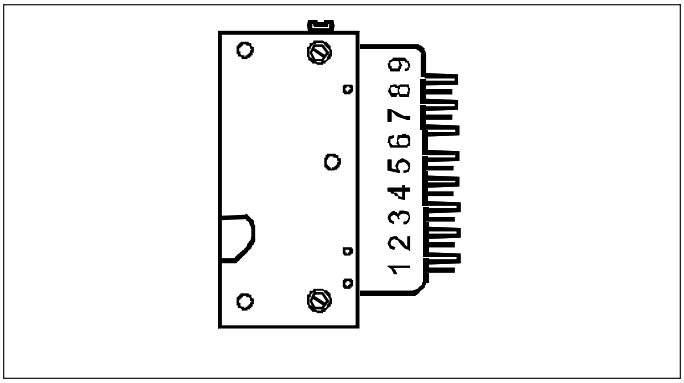
Interlock Switch Assembly

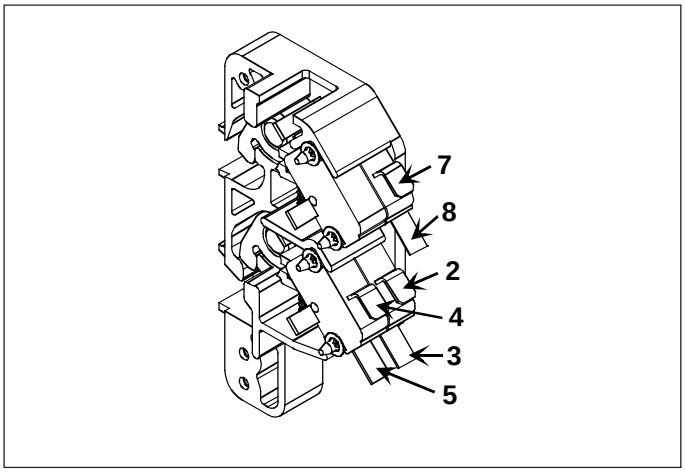
1. Remove outer case.
2. Disconnect wiring.
3. Remove mounting screws securing mounting bracket to oven cavity and remove switch assembly from oven.
4. Re-connect wires to switch and check operation of monitor circuit before operating the oven.

NOTE: When the line fuse is open the **interlock switches and the power relay** must be replaced.



Adjustment

1. To adjust interlock switch assembly, close door.
2. Loosen bottom screw on the interlock switch assembly, allowing the switch assembly to move in or out.
3. With door closed, push forward on interlock assembly to engage door latch. Then pull back on interlock assembly until door is "snug" against front oven cavity and tighten bottom screw.
4. The door will remain latched when proper adjustment is made.



Top Rear Magnetron

1. Removing outer case.
2. Remove top right air baffle by removing mounting screw.
3. Remove wires from thermal protectors and magnetron.
4. Remove center air baffle by removing two mounting screws located in top of the oven, do not attempt to remove air baffle at this time.
5. Remove four magnetron mounting nuts.
6. Remove magnetron and center air baffle.
7. When replacing the magnetron, verify the wire mesh gasket is reinstalled.

NOTE: When reinstalling magnetron, slide left air baffle on magnetron before placing magnetron in place.

Top Front Magnetron

1. Remove outer case.
2. Disconnect wire to thermal protectors and magnetron.
3. Remove low voltage circuit board.
4. Remove two left air baffle mounting screws (do not attempt to remove air baffle at this time).
5. Remove four magnetron mounting screws.
6. Remove left air baffle and magnetron.
7. When replacing the magnetron, verify the wire mesh gasket is reinstalled.

NOTE: Be sure to slide left air baffle on magnetron before reinstalling the magnetron.

Bottom Magnetron

1. Remove outer case.
2. Disconnect wires from the magnetron thermal protectors and the magnetron.
3. Remove bottom magnetron air duct.
4. Remove middle baffle mounting screw and slide air baffle out of the way.
5. Place unit on its left side.
6. Remove bottom access panel.
7. Remove four magnetron mounting nuts.
8. Remove magnetron.

Disassembly

⚠ WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven and discharge capacitors before following any disassembly procedure.

Installation

1. Install magnetron - do not tighten nuts.
2. Install magnetron air baffle.
3. Tighten magnetron mounting nuts.
4. Reinstall middle air baffle.
5. Install bottom access cover.
6. Connect wiring to magnetron and magnetron thermal protectors.
7. When replacing the magnetron, verify the wire mesh gasket is reinstalled.
8. Install outer case.

Magnetron and Control Thermal Protectors (TCO)

1. Remove outer case.
2. Remove wiring from selected thermal protector.
3. Remove 1/8" allen screw/phillips screw used to mount thermal protectors.

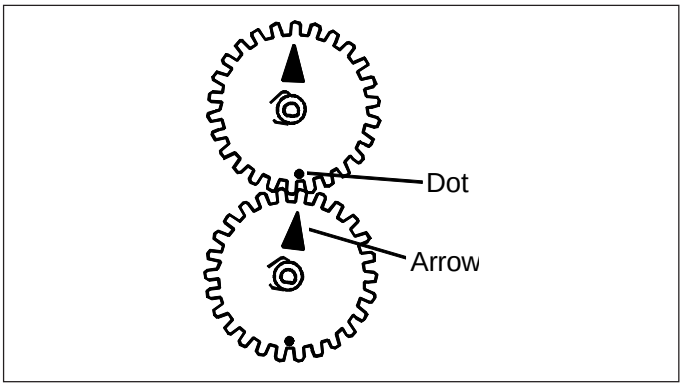
Bottom Access Panel

1. Place oven on side or back.
2. Remove single bottom screw.

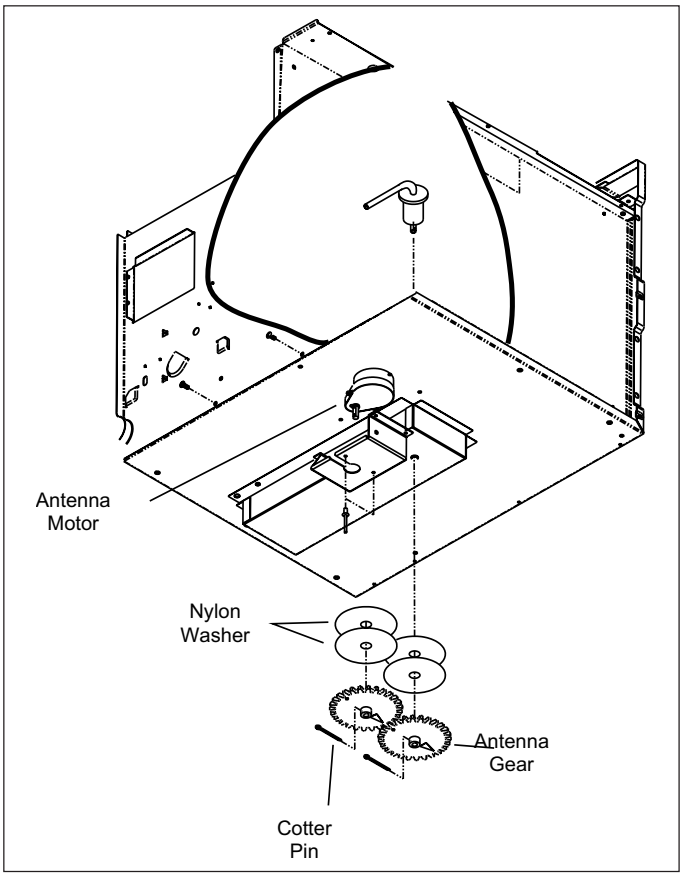
Bottom Stirrer Motor

1. Remove bottom access panel.
2. Remove antenna gear.
3. Disconnect brown motor wires from white and orange chassis wires.
4. Remove two mounting rivets and remove motor.

NOTE: Do not remove bottom antenna gear when removing motor.



NOTE: Gears are aligned by aligning the arrows to the dots on gears.



NOTE: Nylon washers must be installed between antenna gears and cavity.

Bottom Antenna

1. Remove shelf.
2. Set oven on side.
3. Remove bottom access panel.
4. Removal antenna gear.

NOTE: Gears are aligned by aligning the arrows to the dots on gears.

5. Remove antenna from top.
6. Replace and reseal shelf.

Disassembly

⚠ WARNING

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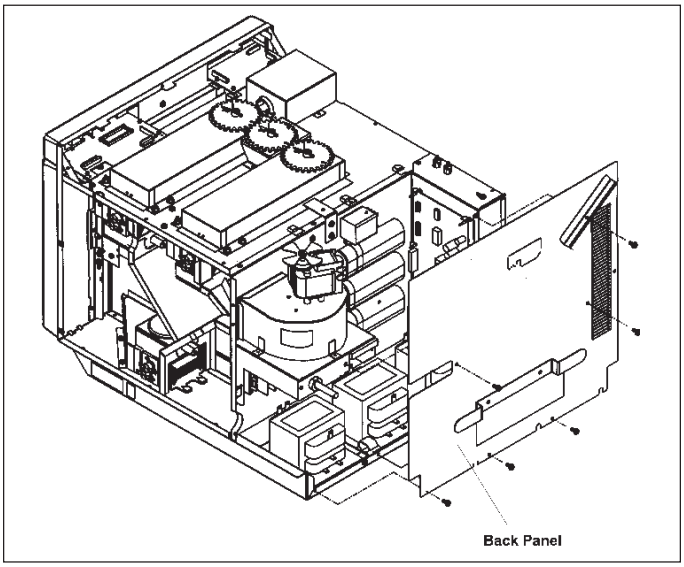
Back Panel

1. Remove outer case.
2. Remove six panel mounting screws.

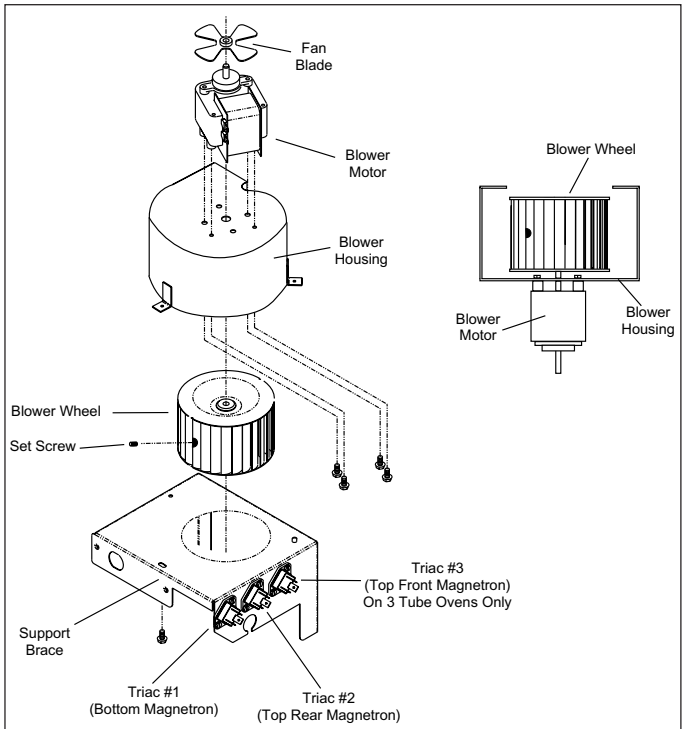


Following are Accessible by Removing Back Panel

- Oven relay
- Blower (see additional instructions)
- Diodes
- Capacitors
  - Top for top front magnetron
  - Middle for top rear magnetron
  - Bottom for bottom magnetron
- H.V. transformers (two mounting screws on back flange and slide transformer out).
  - Right for top front magnetron
  - Middle for top rear magnetron
  - Left for bottom magnetron
- Triacs
  - Back for top front magnetron
  - Middle for top rear magnetron
  - Front for bottom magnetron
- Autotransformer
- H.V. circuit board
- Fuses

Blower Wheel and Motor

1. Remove outer case.
2. Remove back panel.
3. Remove auto transformer.
4. Remove wiring to blower motor.
5. Remove the one blower assembly mounting screw located under the support brace and remove assembly.
6. Remove three mounting screws located under blower housing assembly.
7. Remove assembly from oven.
8. Loosen the 1/8 inch allen set screw securing blower wheel to shaft.
9. Remove three blower mounting housing screws.
10. Remove blower wheel.
11. Remove four motor mounting bolts.
12. When reinstalling blower wheel, push blower wheel on shaft and rotate to insure clearance between blower wheel, blower housing, and mounting bolts.



Blower Assembly

Disassembly

⚠ WARNING

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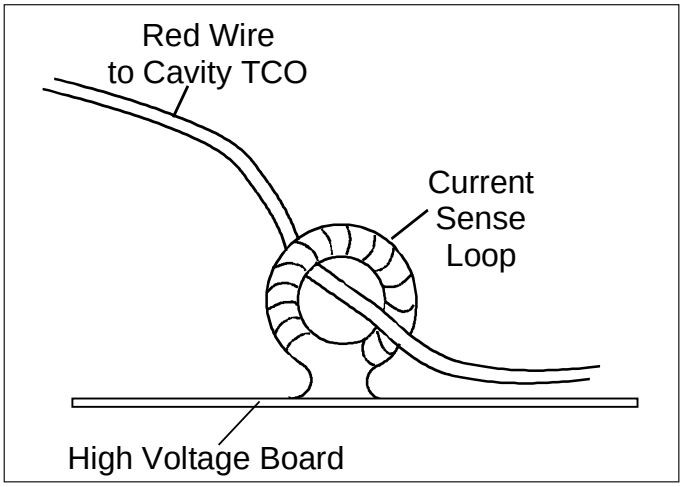
Fan Blade

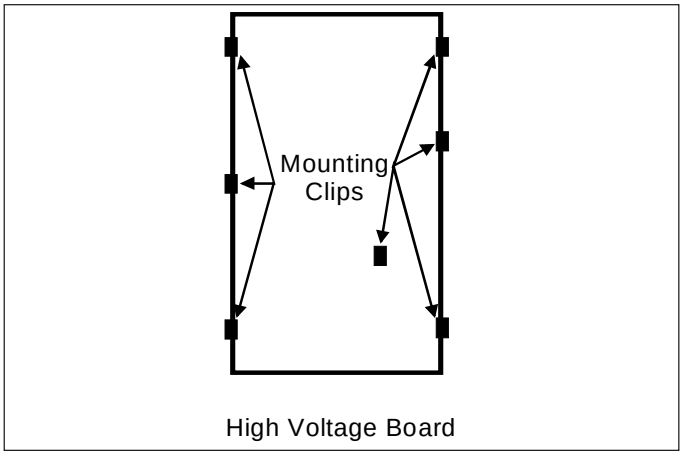
1. Remove top mounting clip from end of shaft.
2. Pull blade off shaft.
3. When reinstalling blade, push blade on shaft and rotate to insure clearance between fan blade and motor mounting bolt.

H.V. Board

1. Unplug connectors.
2. Disconnect wires from terminals E1, E2, and E3.
3. Disconnect sense loop wire from cavity thermal protector.

NOTE: Be sure to route wire through sensing loop when replacing high voltage board.





High Voltage Board

4. Disconnect seven mounting clips, by pushing clips away from the board.

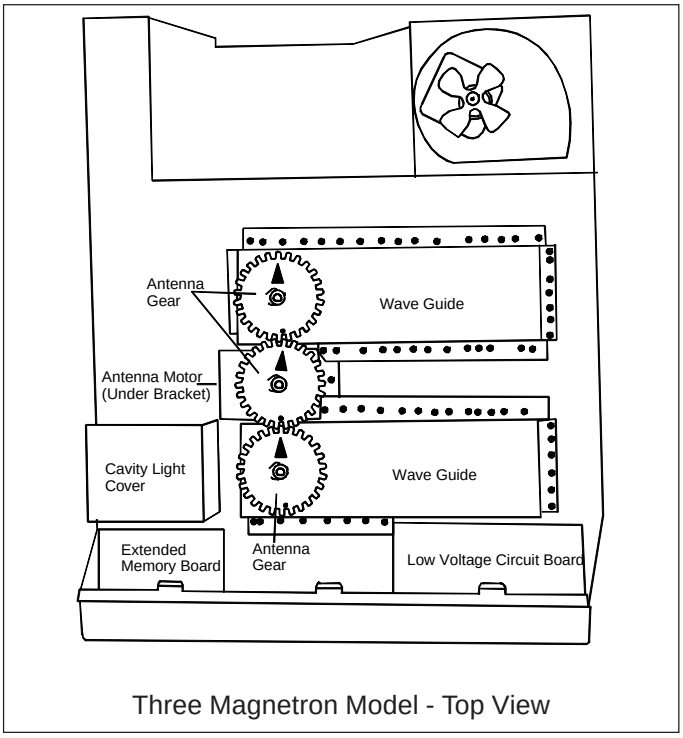
Cavity Thermal Protector (TCO)

1. Removing inner side panel by removing four mounting screws.
2. Remove thermal protector mounting screw (protective covering inside of cavity must be held).
3. Disconnect wiring.

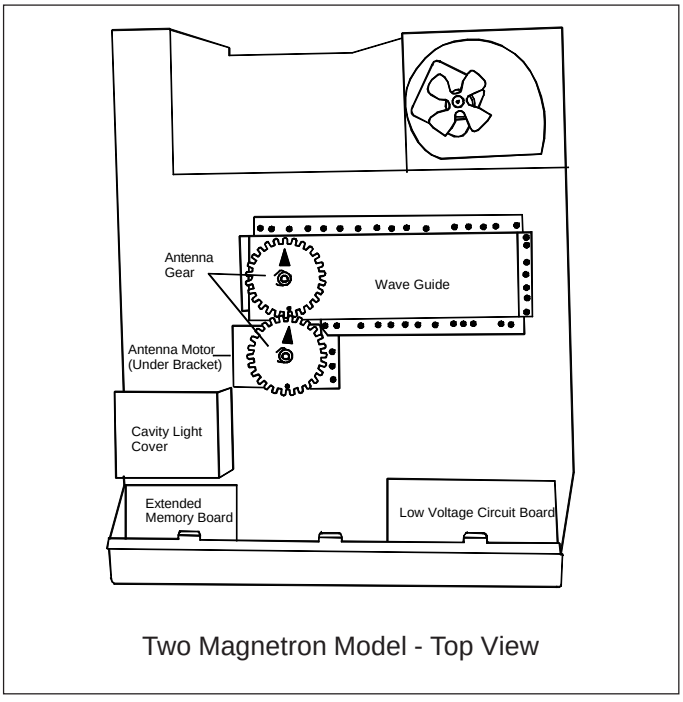
Power Cord

1. Remove outer case assembly.
2. Disconnect wiring.
3. Remove strain relief by compressing with pliers.
4. Remove power cord.

Component Location



Three Magnetron Model - Top View



Two Magnetron Model - Top View

Disassembly

⚠ WARNING

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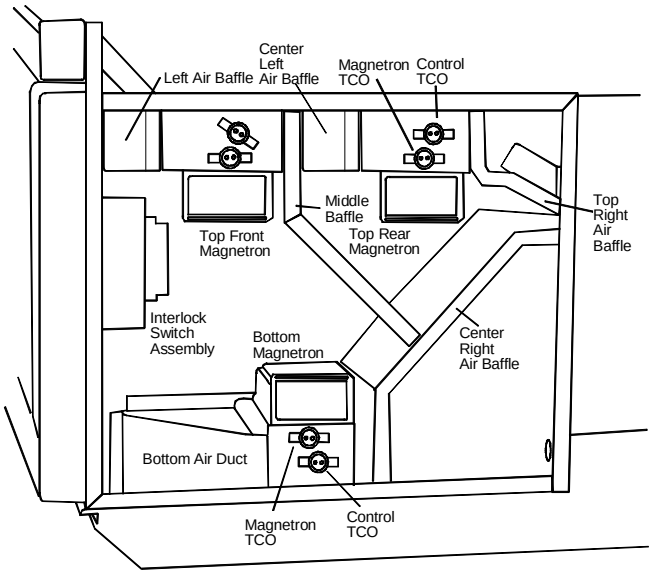
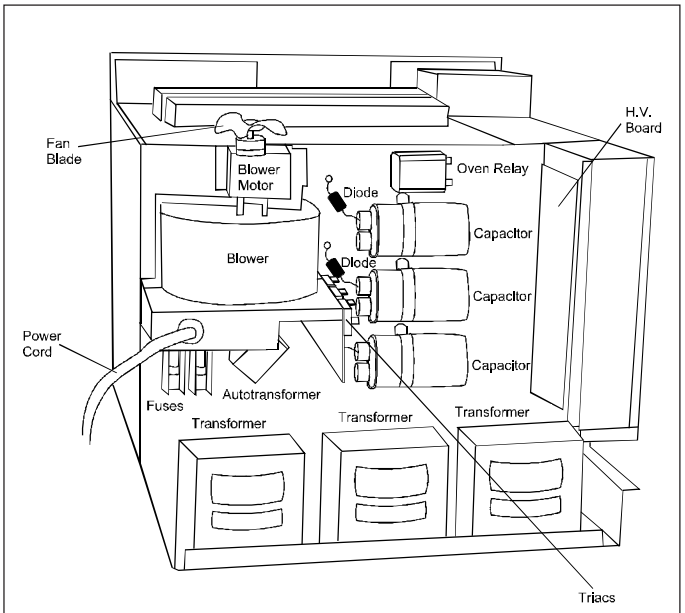
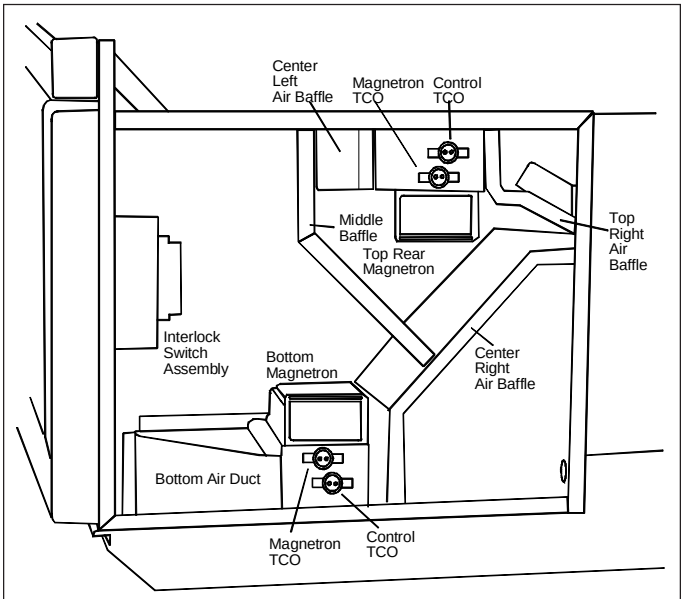


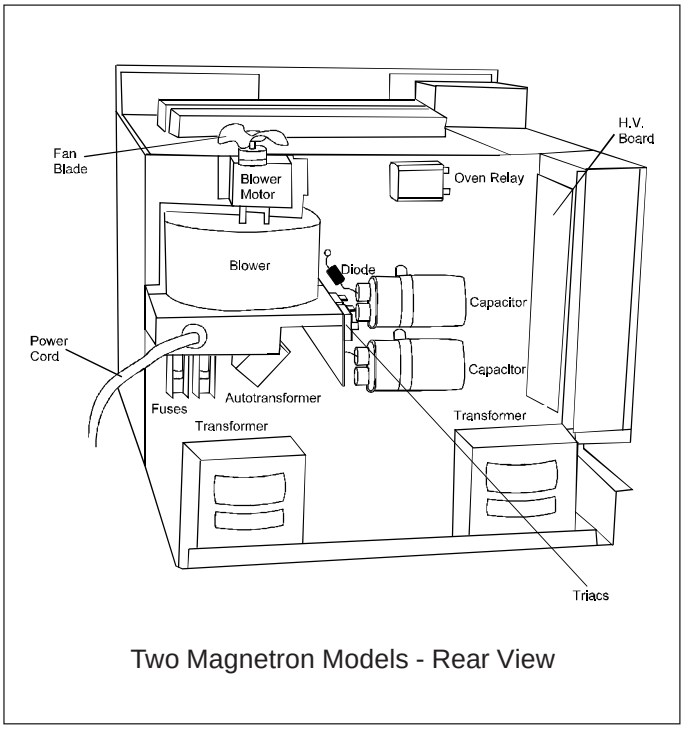
Three Magnetron Model - Side View



Three Magnetron Models - Rear View



Two Magnetron Model - Side View



Two Magnetron Models - Rear View

Disassembly

⚠ WARNING

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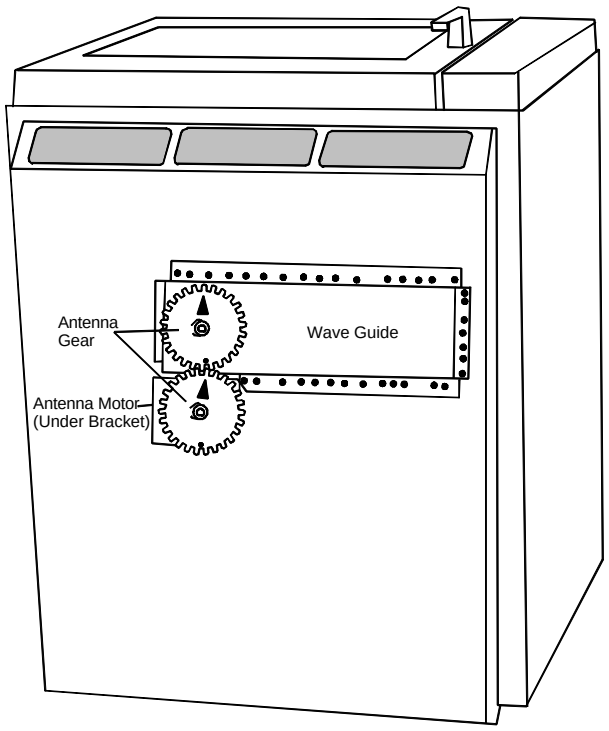
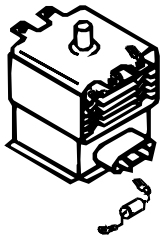


Bottom View

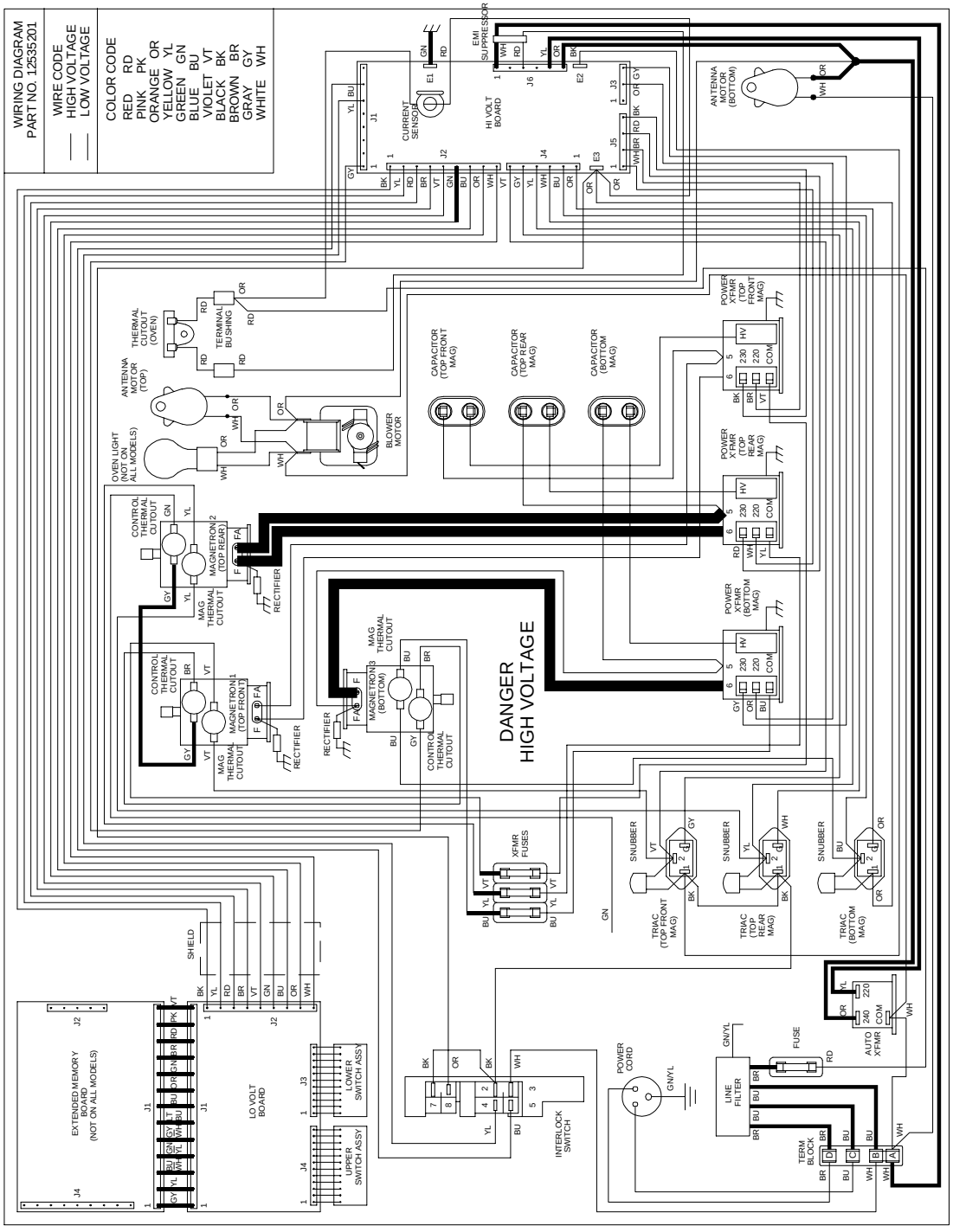


Alternate Diode Location

Wiring Diagram and Schematic

WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven before servicing, unless testing requires it.



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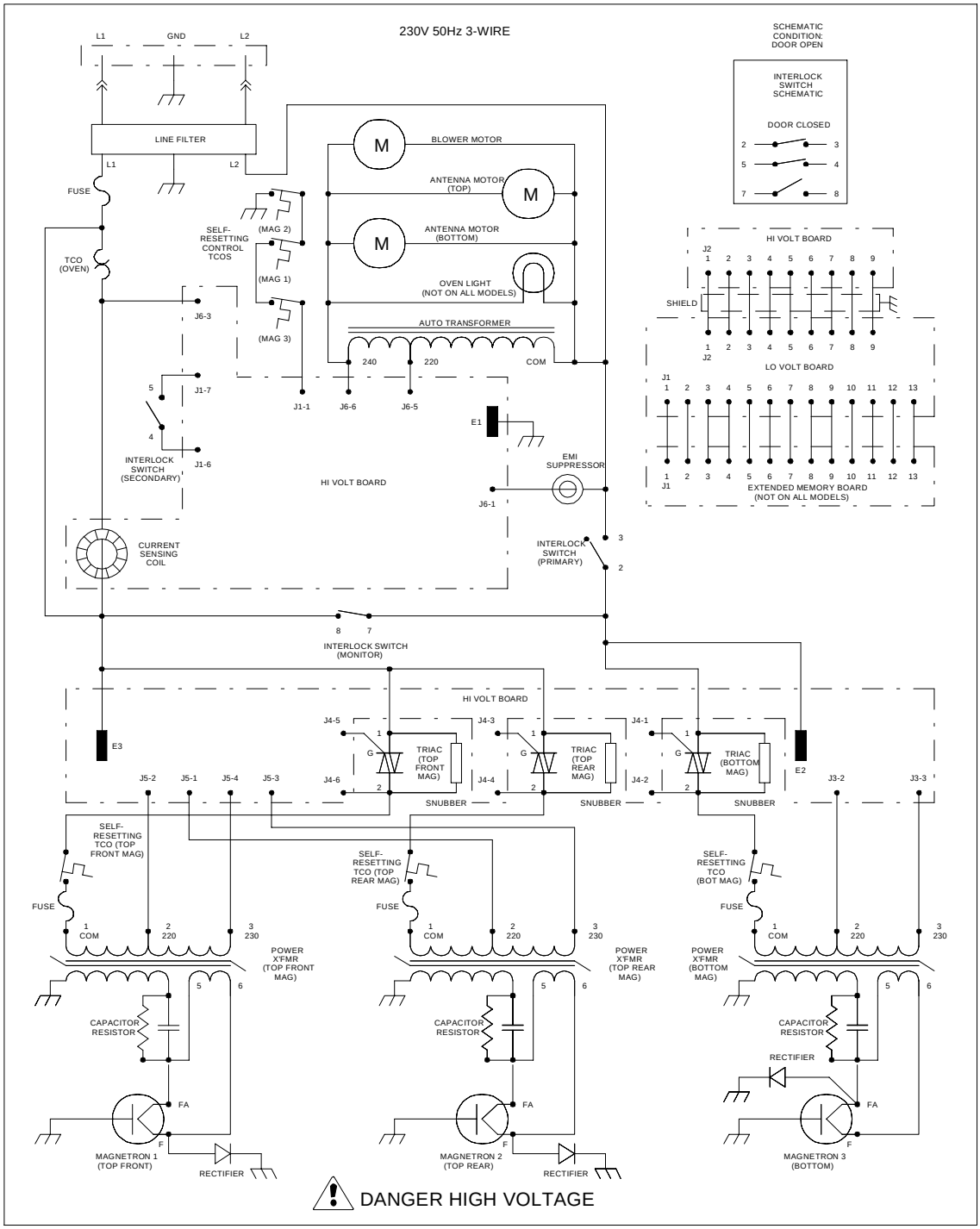
DANGER

High Voltage

Wiring Diagram and Schematic

WARNING

To avoid risk of electrical shock, personal injury, or death, disconnect power to oven before servicing, unless testing requires it.



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DANGER

High Voltage